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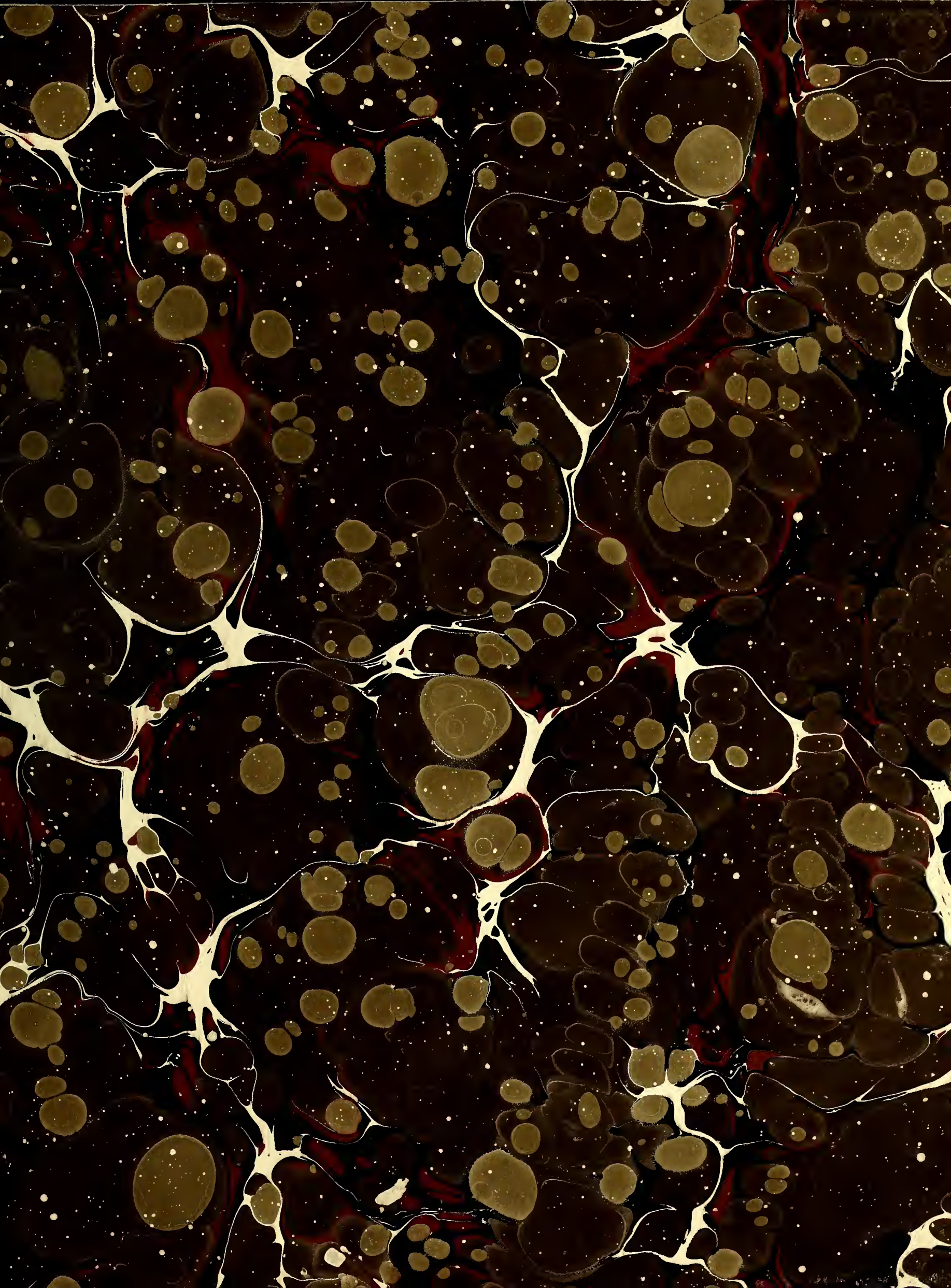



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RESEARCHES
INTO THE
CAUSES, NATURE, AND TREATMENT
OF
THE MORE PREVALENT
DISEASES OF INDIA,
AND OF
WARM CLIMATES GENERALLY.

VOL. II.

LONDON:
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RESEARCHES
INTO THE
CAUSES, NATURE, AND TREATMENT
OF
THE MORE PREVALENT
DISEASES OF INDIA,
AND OF
WARM CLIMATES GENERALLY.

ILLUSTRATED WITH
CASES, POST MORTEM EXAMINATIONS,
AND NUMEROUS COLOURED ENGRAVINGS OF MORBID STRUCTURES.

By JAMES ANNESLEY, Esq.
OF THE MADRAS MEDICAL ESTABLISHMENT,
LATE SURGEON TO THE MADRAS GENERAL HOSPITAL, M.R.C.S. AND M.R.A.S.

IN TWO VOLUMES.
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ERRATA.

PAGE 26, *note*, for exhibited in Plates, *read* in the Plates.

—— 84, line 2, for of, *read* or.

—— 177, — 18, for bilious, *read* villous.

—— 218, — 25, for July, *read* January.

—— 233, — 3, for least, *read* last.

—— 419, — 2, for impress, *read* oppress.

—— 532, — 8, for epispastric, *read* epispastic.

—— 532, — 25, for evening, *read* 10th.

—— 572, — 1 and 2 of *note*, for happens, *read* hoppers.

—— 577, — 20, for which are so very different, *read* so very different.

—— 581, — 11, for causes, *read* sources.

APPENDIX, page v. line 18, for Lowger, *read* Lowjee.

—— viii. table, for Gadapore, *read* Gazapore.

EXPLANATION OF PLATE XXXVIII. line 3, for [Pl. XXXVII. fig. 1.], *read* [Pl. XXXVII. Cobb's Case, No. 1.]

PRACTICAL RESEARCHES

INTO THE

DISEASES OF WARM CLIMATES.

BOOK IV.

OF THE DISEASES OF THE BOWELS, AND OF THE SPLEEN AND PANCREAS.

THERE is no class of diseases which requires more careful observation during the life of the patient, and minute research after death, than affections of the bowels, as they occur in India, and, we may add, in warm climates generally. In many localities they constitute, both in their simple and complicated forms, the chief class of diseases, and are frequently attended with the greatest danger. The observations which we shall offer upon this important class of maladies will be chiefly the result of our own observations and inquiries. But before we enter upon them, we shall premise some remarks upon the disorders of the pancreas and spleen, as respects the forms in which they have come before us, more particularly as they occasionally, although by no means frequently, are complicated with the diseases which have already been considered by us, and with those of which we are about to treat.

CHAPTER I.

OF THE DISEASES OF THE SPLEEN AND PANCREAS.

THESE diseases are not generally very prevalent in warm climates: those of the pancreas, perhaps, not more so than in temperate countries, as far as our own observations extend. Affections of the spleen are prevalent only in particular districts of country and situations. In India they are not very frequent, unless in neglected or improperly treated cases of ague or remittent fevers. Disease of the spleen is even more frequent in the south of Europe, particularly in Italy, Sicily, and Spain, than in many intertropical regions. When they do occur in warm countries, and more particularly when they become the subjects of *post mortem* observation, they are associated with the most prevalent and most fatal diseases of the climate, and, on this account, chiefly deserve our notice in this Work.

SECTION I.

Cursory Remarks on the Diseases of the Spleen.

INFLAMMATIONS of the spleen are not frequent in India. In various other intertropical countries they are much more prevalent; and in some situations they are endemic, more particularly in low, swampy places where agues abound. In such districts the inflammatory action which supervenes is generally of a slow or chronic nature, and attended with great congestion and obstructed circulation in the viscus. In some cases the enlargement which takes place in consequence of this condition is very great,—the spleen seeming to fill nearly the whole of the left hypochondriac and epigastric regions. When inflammation of this organ presents acute or sub-acute symptoms, it almost always is seated in its fibrous covering, and is attended with more or less pain, and a well-defined enlargement, which, however, while the acute symptoms continue, is seldom very great.

Besides inflammations of this viscus, varying from the more active forms to the most chronic, and seated chiefly in its fibrous covering, it is subject to congestions and accumulations of blood in the convoluted congeries of vessels of which it is formed, occasioning great tumefaction in most instances, and in some, enormous enlargements, without much pain or general disturbance to the system. These tumefactions of the spleen are frequently endemic, and occur chiefly as the consequence of intermittent fevers: they sometimes induce chronic inflammatory action of the fibrous tunic,—and thus the congested condition is thereby often prolonged.

The most frequent states of organic change which the spleen has presented to our observation, are the following:—1st. Enlargements of this viscus. The enlargements sometimes are to a very great extent, the spleen

weighing ten or twelve pounds, and yet no very sensible alteration can be detected in its substance by the unassisted eye. Frequently, however, its structure is at the same time much changed, its colour being much deeper, its consistence greatly diminished, and rendered more friable, so as scarcely to admit of examination without falling to pieces. Its external membrane is also often torn with ease: sometimes it is thickened, more vascular, and occasionally cartilaginous in parts. 2d. It is, in some cases, ossified in various places, and in others covered with large patches of coagulable lymph and albuminous concretions. In such cases it frequently adheres to the adjoining surfaces and viscera. 3d. Its internal structure frequently contains purulent collections, sometimes apparently unencysted, and flowing through its substance; at others, enclosed in one or more distinct cysts. It also is subject to tubercular formations in their various forms, and to hydatids. 4th. The spleen is occasionally found smaller than natural, and dry and shrivelled; but this is comparatively a rare occurrence in warm climates. 5th. Instances have occurred wherein it has been ruptured, from the congestion of blood to which it has been subject in the cold stage of an ague. And, 6th. Its internal substance has been occasionally found reduced to a grumous and pultaceous mass.

The *causes* of diseases of the spleen are chiefly those inducing intermittent and remittent fevers. It is seldom observed as a primary disease, and seems to result, in a great measure, from the deficient energy of the system, particularly of the digestive organs. It is frequently observed as a sequela of agues, in low, marshy, and moist situations upon the sea-coast, more particularly in wet and warm seasons, and where there is a deficiency of spring or river water. In some places within the tropics, where the water consists entirely of rain-water, preserved in tanks, situate in low, marshy grounds, diseases of the spleen are endemic. In countries far inland, and considerably above the level of the sea, these diseases are comparatively rare.

When the spleen is simply enlarged or tumefied, without inflammatory action being present, little inconvenience or pain is felt by the patient,

even although the enlargement may be to a very great extent, the tumefied spleen passing across the umbilicus to the right iliac region, and filling nearly the whole abdomen. In these cases, the congestion in the spleen is usually the consequence of protracted agues, more particularly when they have been injudiciously treated. In cases of this description, the nature and progress of the disease are readily perceived, as the margin of the tumefied viscus can be readily traced, and the extent of enlargement very nearly ascertained.

If the spleen be inflamed in a more or less active form, a dull, heavy, and aching pain is felt in the left hypochondrium, with occasional lancinating pains in the same situation, observed particularly upon quick motion, and after a full meal. In the more acute cases, chills or rigors issue in the disease, to which succeed pain, nausea, and occasionally vomiting, with thirst, tension, colicky pains, and impeded respiration. The tongue is generally white, foul, and excited; the pulse somewhat accelerated; the bowels constipated or irregular; the urine high-coloured, and frequently voided; and the skin sallow, dusky, and rather hot. In the sub-acute and chronic cases of inflammation, several of these symptoms are either altogether wanting, or are so slight as frequently to be overlooked. The spleen is generally tumefied to a considerable extent, at the same time that its proper coat is inflamed; but the tumefaction is never so great as in the cases of simple congestion of the viscus, already alluded to. Sometimes the enlargement is scarcely to the extent of allowing the spleen to be felt beneath the left false ribs, even in the most acute cases of the disease.

Of the Treatment of the Diseases of the Spleen.—When simple tumefaction of the spleen without inflammatory action comes before us, little more is requisite than to carry off the morbid secretions which are usually present, and to give energy to the digestive organs. This is best done by a full dose of calomel at bed-time, and the purging powder, or the bitter purging draught, the following morning. These remedies should be continued daily, or on every other day, according to the circumstances of the case, until the motions (which are morbid in almost all the cases of diseased spleen which have come before us) have assumed a healthy hue. After purgatives have

been employed two or three times, then the nitro-muriatic acid wash should be assiduously applied over the region of the spleen, and the nitric acid may be given internally at the same time in the patient's drink.

We cannot too strenuously recommend this treatment in diseases of the spleen, especially the nitro-muriatic solution. But in order that this latter may be beneficial, a continued and well-regulated course of purgatives, and afterwards of aperients combined with tonics, should be adopted. In cases of congested or tumefied spleen, we should endeavour to support, and even promote, the powers of the system, while we purge the bowels. With this view, after having given two or three full doses of calomel, or calomel with opium, at bed-time, we shall adopt with much benefit the blue-pill and the aloes and myrrh pill, giving them every night, and the full doses of calomel every third or fourth night only. But the purgative draught should be continued every morning until the disorder disappears. The best purgative draught, in cases of this description, is that composed of the compound infusions of gentian and senna; to which may be added some of the bitter purging tincture contained in the list of formulæ,* and a little of the spiritus ammoniæ aromaticus, or of the spirit. ætheris nitrici. If we should find it requisite to act more energetically upon the bowels, this draught may be repeated at mid-day, or a little of the sulphate of magnesia, sulphate of soda, or sulphate of potass, may be added to the above draught.

Hæmatemesis, with a dark, grumous state of the stools, is not an unfrequent concomitant of congested spleen: in cases of this description, the treatment already recommended need scarcely be even modified: the nitric acid drink is here especially indicated, with the external use of the nitro-muriatic acid wash. If pain be present, with a plethoric state of the habit, and a full pulse, leeches applied over the region of the spleen or stomach are evidently necessary; but in cases of this kind, no means should stand in the way of active and continued purging, as just now recommended, promoted by the injection of active cathartic enemas.

* See Vol. I. page 256.

When inflammatory action is, apparently, from the symptoms enumerated, going forward in the spleen, leeches should be applied upon the left hypochondrium, and the local bleeding carried as far as the habit and condition of the patient, and urgency of the symptoms, indicate. After the leeches have ceased bleeding, a cloth, moistened with the nitro-muriatic solution, should be applied upon the splenic region, and covered with a hot poultice, which, with the moistened cloth, ought to be frequently renewed until the acute symptoms subside, when simple sponging with the solution night and morning will be all that is necessary. In addition to these means, the use of purgatives and tonic aperients must be persisted in until the disease is removed and the motions acquire a healthy appearance, when change of air and regular exercise should be adopted if they be within the reach of the patient.

During the treatment of diseases of the spleen, the diet and regimen of the patient should be carefully attended to. The patient's food should be light, nutritious, and in no greater quantity than his digestive organs can well dispose of. Vinous and fermented liquors should be avoided, and his drink be of the most mild and cooling description. He ought to take regular exercise in the open air, as far as his strength and other circumstances may permit; and his clothing should be warm, and suited to the vicissitudes of the atmosphere and sudden changes in its temperature.

CASE CXXXIII. — *Enlarged Spleen; Torpor of the Liver, &c.*

ROBERT M'KENNIE, ætat. 36, 1st Battalion of Artillery. He has been sent from an out station to the General Hospital at Madras: no account of his treatment has accompanied him, though he says he has been ill three years with this complaint. Admitted 9th November, 1820, in the evening. The abdomen is much swelled, and there is a very considerable enlargement of the spleen, which fills up completely the whole of the left hypochondriac region and the lower part of the belly on the left side; he complains of a dull, heavy pain in the tumour, and cannot bear pressure; feels great pain when he attempts to lie on the right side, and cannot recline upon his back without great inconvenience, but when he stands up and walks about he is perfectly at ease; he sleeps well, and passes urine freely; says his bowels are regular, but in this we think

he errs; pulse soft and regular; skin natural temperature. — Calom. gr. xx.; opii, gr. ij. h. s. s. Pulv. jalap. compos. ʒj. m. s.

10th. — Has passed much urine in the night, and a great deal of clay-coloured, offensive matter by stool; tongue rather excited. — Repet. pilul. calom. ut antea, et repet. pulv. purg. A cloth, moistened with the nitro-muriatic lotion, to be applied over the enlarged spleen, with a large poultice over it, and both to be renewed frequently.

11th. — Stools copious and more natural; in all other respects the same. — R Pilul. aloë. cum calom. no. 1. three times a day; haust. amar. cum sennâ, ʒiij. nocte maneque. Cont. alia.

13th. — Tongue furred in the centre, and dry, the edges moist and white; complains of tightness in his head and vertigo; no other change. — Sixteen leeches to the temples. Mist. purg. ʒjv. stat. Cont. alia.

14th. — Has still some degree of vertigo; his breathing is interrupted when reclining on the left side; no change for the better. — Cont. ut antea.

15th. — His bowels are very freely acted upon, and his motions are not particularly morbid; the pain in the region of the spleen is very acute, but the spleen itself appears to be rather diminished in size, and the fulness of the abdomen is certainly less; tongue excited; pulse 60; urine copious. — Cont. med.

17th. — Swelling of the abdomen much reduced, and the enlarged spleen is very distinctly felt; bowels fully acted upon, and with manifest advantage. — Cont. ut antea.

19th. — Much less pain, except when he lies on his right side; tongue rather dry. — Cont.

23d. — The enlargement of the spleen is visibly decreased, and the tumefaction of the abdomen almost gone; stools regular and free; considerably less pain. — Cont. ut antea.

December 1st. — The enlargement of the spleen decreases daily, and the tumefaction of the abdomen is nearly gone; he says that he is free from pain; pulse natural; tongue clean and moist; bowels regular; appetite good, and sleeps well. — Cont. lotio, cataplasm., pilul., et haust. amar. cum sennâ. Improve his diet, and give a little wine.

The same plan was continued without interruption, and with decided advantage, till the 14th, when he was considered convalescent, and allowed to take exercise without the walls of the hospital. He recovered daily, and joined his corps about the end of the month.

This case very satisfactorily illustrates what we have advanced on the subject of the more chronic disease of the spleen, both as respects the circumstances under which it is met with in Indian practice, and the method of cure we have recommended. Various other cases might be adduced, but they are so similar as respects both their pathological relations and treatment, that the details of them would be merely repetitions.

CASE CXXXIV.—*Acute Inflammation of the Spleen, &c.*

MR. S——, aged nearly 40, was seized, 17th March, 1816, with rigors, succeeded by pain in the region of the spleen, fulness, tension, and impeded respiration. His pulse was full, skin somewhat hot, and bowels costive. The febrile symptoms subsided in the morning of the 18th, but returned towards evening, after a well-marked rigor. The spleen, upon examination, was detected very much enlarged and tender. Local depletions, followed by blisters and active purgations, were instituted. Decoction of bark and the compound infusion of gentian were given with aperients. The fever, however, continued in a quotidian form; and on the fifth day delirium supervened, and was succeeded by coma. The alvine dejections were always black, extremely fetid, and grumous; and although various purgatives were given with decision, the motions at no time improved. He died on the 8th day from the development of the disease.

Examination, four hours after Death.—Upon opening the head, a slight serous effusion was found between the membranes and in the ventricles of the brain. The lungs were sound; but the pericardium contained more fluid than natural, and the heart was paler and softer than usual. Upon opening the abdomen, the liver was found very much enlarged, congested, and of a deeper colour than natural. It was not, however, otherwise diseased. The left lobe of the liver adhered slightly to the spleen, which was also very greatly enlarged. Its proper coat was thickened, and torn through with ease, and its internal substance converted into a grumous, black, and pultaceous mass.

Remarks.—The subject of this disease had suffered frequently from intermittent and remittent fevers, and his constitutional energies were much exhausted. In this case the spleen presented the greatest marks of disease. The effusion in the head was merely consecutive, and accounted well for the cerebral symptoms present during the last three days of his life.

SECTION II.

Cursory Remarks on Diseases of the Pancreas.

THE situation of the pancreas renders it a very difficult matter to obtain any knowledge even of the existence of disease of this viscus during the life of the patient. We frequently, however, find, upon examination of bodies after death, very manifest changes in its organisation and size. These changes chiefly consist of simple enlargement, of enlargement with scirrhus hardening, and of cheesy tumours in its substance. But whether these lesions are always the result of slow inflammatory action, or of some change in the nutrition of its substance, or of both, is a question which admits not of a ready solution. Our knowledge, also, respecting the state of its function, or the qualities of its secretion during these states of disease, is equally defective.

We have sometimes found the pancreas very greatly enlarged, and in some degree hardened; occasionally we have seen it reddened and evidently inflamed in parts, and this appearance we have remarked either alone, or conjoined with enlargement of the various lobules of the gland, and, in a few cases, with small collections of pus formed in the interlobular cellular substance: at other times we have observed it tuberculated and irregularly enlarged; on some occasions enlarged and scirrhus, the texture of the organ being traversed by gristly bands, and a reticulated, firm structure, with a glairy fluid filling the interstices. Yet in these cases the patients presented only the symptoms of chronic inflammation of the liver, or at least they were considered as suffering under that disease. When the pancreas is much changed in its organisation, and much enlarged, it often presses upon the common duct, and either impedes or entirely obstructs the flow of bile into the duodenum. In this case, the derangement is generally assigned to the biliary apparatus, owing to the sallow countenance of the patient, and the jaundice which frequently supervenes from the obstruction of the ducts. In some cases, the enlargement of, and the tuberculated and knotty tumours formed in, the pancreas,

may be mistaken for scirrhus pylorus; and it is often a matter of difficulty to decide which of the two diseases is actually present. In some instances, however, attention to the manner in which the function of digestion is performed, and to the presence of sickness, and the period after a meal at which nausea or vomiting supervene, will guide the practitioner to a correct diagnosis.

In cases of diseased pancreas, inflammation often supervenes either in the viscus itself or in its surface or vicinity, uniting with it the pylorus, duodenum, biliary ducts, and even the gall-bladder, by firm adhesions. In these instances, if the diseased state of the pancreas was not primarily the result of inflammatory action, this action must have supervened in the progress of the disease, otherwise the consequences of inflammation could not have existed. In such cases the pancreatic disease may be viewed as having supervened primarily; but we believe that, in the great majority of instances where the pancreas has been found diseased, it has been consecutive to very chronic disorder of the stomach, duodenum, or liver. We are fully convinced, from the information we have been enabled to obtain of the state of health of many of those who have died with diseased pancreas, that it was consequent upon very severe dyspepsia, combined in many instances with an irregular and morbid state of the alimentary canal. In others, it seemed to have supervened to obstinate disease of the biliary organs.

Whether or no chronic inflammation of the mucous surface of the duodenum may be propagated along the ducts to the pancreas, as some pathologists suppose, is a question which is more readily proposed than answered: we believe that it may possibly supervene in this manner, but that it very seldom occurs. If inflammation actually extend from the internal surface of the duodenum along the pancreatic duct to the pancreas, it must still more frequently be propagated along the biliary ducts, and transmitted to both the gall-bladder and to the liver itself. But, as we shall have to remark when the subject of hepatic dysentery comes before us, we consider that this is by no means a probable consequence, and cannot frequently supervene. We must look upon inflammation of this viscus as taking place more as a consequence of disorders of its functions, when it

occurs primarily, than as proceeding from the extension of inflammation from the alimentary canal along its duct. When it is a consecutive disease, we believe that it is induced most frequently from inflammation having extended from the concave and posterior part of the liver, or from the gall-bladder and biliary ducts, and perhaps occasionally from the external surface of the duodenum. In a great many of those cases wherein this viscus has been found diseased, the more immediate cause must be referred to previous disorder of function. But it is almost impossible to determine when such disorder commenced; as it is generally so much the result of, and complicated with, the more obstinate forms of dyspepsia, and functional and organic disease of the liver, as to put it out of the power of the most discriminating observer to ascertain what share of disorder ought to be attributed to this organ.

When, however, the functional disorder has induced either organic change, or acute, sub-acute, or chronic inflammatory action, attentive observation and much experience may lead the practitioner to dread the existence of disease of the pancreas, although he will seldom be enabled, unless there be considerable emaciation and well-defined symptoms present, to form any idea as to the particular kind of disorder existing. If pain be felt, it may proceed either from the posterior and inferior edge of the liver, or from the gall-ducts, or from the duodenum or pylorus, or from the pancreas itself, or from any two or more of these parts. If enlargement be evident, it may be the consequence of thickening or scirrhus of the pylorus, accumulations in the colon, or morbid duplicatures of this viscus,* or of enlarged glands at the root and in the folds of the mesentery, or of any of the organic changes of the pancreas enumerated above. Even when disease of the pancreas is present, it is seldom met with as a simple and uncomplicated malady. Most frequently it occurs in conjunction with morbid structure in the situations now noticed, as may be remarked in several of the cases already detailed in the former volume. We seldom or ever have an opportunity of investigating the *post mortem* appearances of acute disease of this organ, except in cases which terminate fatally, either altogether from disorder existing elsewhere,

* See the section on the Colon, in the sequel.

or from the complication of such disorder with the pancreatic disease; and even in the majority of those cases, we seldom observe more than the remote consequences of the disease which had been going on in the pancreas, and are still left much in the dark respecting the nature of the earlier changes induced in the structure of this viscus.

Diseased pancreas is not indicated by any very acute symptoms. The patient often feels an aching, heavy, or dull pain in the back, beneath the scapulæ, and deep in the epigastric region. This is often mistaken for chronic disease seated in the posterior part of the liver. When such mistake is made, it cannot be of any very material consequence as respects the treatment, as the means of cure are nearly the same in both cases. There is generally a sensation of compression, internal heat, constriction, and anxiety at the præcordia and deep in the epigastrium. The tongue is generally white, and its papillæ excited, with dryness of the mouth and fauces, and occasionally with eructations of a viscid fluid disgorged from the stomach. There are also generally loss of appetite, nausea, and occasionally vomiting and hiccup, with great emaciation in the advanced states of disease. The skin is usually hot and dry, and the pulse somewhat accelerated. The bowels are either costive, or a slight diarrhœa is present, characterised by mucous and glairy stools.

As disease of the pancreas is seldom met with in a simple or uncomplicated form, being usually accompanied with inflammations of the liver, stomach, or duodenum; so we must expect that the symptoms now enumerated will be attended with, and, in a great measure, obscured or entirely concealed by, the symptoms characteristic of these diseases. Indeed, the pancreatic derangement very seldom becomes apparent, when existing in any of these states of complication; for it is generally consecutive to the disease of the adjoining organs, and is much less acute, and less distinctly developed, than they are.

As respects *the causes* of disease of the pancreas, we have nothing which we can adduce with confidence. Its most frequent exciting causes seem to be,

protracted or improperly treated disorders of the stomach, duodenum, and liver, and the causes which we have assigned for these maladies. The habitual use of heating and irritating articles of diet, and of spirituous liquors, may have some share in the production of disease of this viscus.

As to *the treatment* of diseased pancreas, we have nothing which we can add with much confidence. Antiphlogistic remedies should be resorted to. Local depletions, counter-irritations by means of blisters, setons, or the use of the tartar-emetic ointment, and cooling purgatives, seem to us the best suited to disease of this viscus; but the remedies must necessarily be chosen with a strict reference to the particular complication which it presents in practice. In the majority of instances, deobstruent aperients given internally, whilst the nitro-muriatic wash is used to the trunk of the body, will be productive of some advantage, and at the same time tend to remove the disorders with which diseased pancreas is most frequently complicated, more particularly after local depletions have been carried sufficiently far. We do not recommend mercurials to be employed when the pancreas is obviously diseased, unless with a view to its purgative effect. Whether or no the speedy induction of ptyalism, by the use of mercurial preparations, would act beneficially in deriving from the seat of disease to a set of glands similar in many respects to the pancreas, is a question which our experience has not enabled us satisfactorily to answer; and we only allude to it with a view of turning the attention of others to the subject.

CHAPTER II.

OF INFLAMMATION OF THE SMALL INTESTINES.

INFLAMMATION of the small intestines may be seated chiefly in its mucous or villous tunic, or it may extend no further than to cellular tissue immediately subjacent to it, and connecting the villous to the muscular coat. In these cases, more particularly the former, the inflammation is generally slight; and if it advances no deeper, the disease is soon removed by judicious treatment. In many cases, however, especially when it is also seated in the sub-mucous tissue, the inflammation extends through the whole cellular texture uniting the various membranes of which the small bowels are composed, or it attacks the bowel to this extent at first. When the disease commences in the mucous coat, and extends to the substance of the bowel, it becomes much more acute and dangerous. When acute enteritis is met with in warm climates, more particularly in India, it generally advances in this manner, as we shall have to point out with more precision in the sequel; but it also attacks, although more rarely, in a primary and more immediate manner, the substance of the bowel, forming what has been usually denominated phlegmonous enteritis. Even when it seizes upon the substance of the viscus, it seldom invades, at the same time, the free or serous surface of the intestinal peritoneum; but it soon extends itself to this membrane on the one side, and to the mucous coat on the other, so that the various tissues of which the bowel is composed at last become the seat of disease. Inflammation of the small intestines seldom commences in their peritoneal surface, unless from the extension of disease from some other organ: in this manner, however, we frequently observe enteritis supervene in warm climates, as may have been remarked in some of the cases already detailed, and as will be shewn in some which will be given in the sequel; but in nearly all these instances it has been a consecutive disease.

We shall proceed, *first*, to offer some remarks on the pathology of inflammations of the small intestines, and afterwards to state the result of our experience as to the modes of treating them.

SECTION I.

Of the Pathology of Inflammations of the Small Intestines.

INFLAMMATION of the small intestines, as observed in warm climates, is generally the consequence of the flow of morbid secretions from the liver and pancreas into them, and of the accumulation of mucous sordes upon their internal surface. We have not observed, during our experience in India, many cases of this disease that were not chiefly owing to these causes, assisted by the influence of the usual exciting causes of inflammation of internal organs, such as exposures to night air, to chills and dews, or to currents of cold air when the body is perspiring; the ingestion of cold fluids whilst the system is in this state; and the use of stimulating, acrid, and irritating matters. The intoxicating liquors so much indulged in by the lowest classes of Europeans in India and warm climates, very frequently occasion the disease; but as this cause also gives rise to a morbid condition of the liver and of the biliary secretions, it is difficult to determine what share is to be ascribed to the direct influence of the former, or to the irritating qualities of the latter. The use of improper substances, particularly of the acerb and indigestible fruits of warm climates, is also a very frequent cause of enteritis; and in certain conditions of the system, particularly when the secretions of the large abdominal viscera are in a morbid state, or when the secretions poured out from the mucous surface of the alimentary canal are in any degree vitiated, not infrequently induce this disease.

When the enteritis proceeds from exposure to cold, from wet clothes, sleeping in the open air, and the influence of a chilling atmosphere or

currents of air—causes very prevalent amongst troops on service in the field, more particularly in India,—the inflammation then not infrequently attacks the substance of the intestines, or their peritoneal coat, in some cases without any complication, but more frequently conjointly with the liver, and occasionally with the large bowels.

Under every circumstance, however, enteritis most frequently supervenes in the mucous surface, and gradually extends itself through the substance of the intestine to the peritoneal covering: but this latter part comparatively seldom becomes the seat of the inflammation unless consecutively; and even in the more chronic cases, the disease of the interior coats may have proceeded to ulceration, and the ulcerations made their way through the serous coat, before inflammation has been induced in this membrane, particularly in its external or unconnected surface. When inflammation is observed on the external surface of the small intestines, in warm climates, and more particularly in India, the coats beneath are almost always in a state of active disease; and in the majority of cases, if coagulated lymph has been formed on the external surface, then ulceration within may be considered as having advanced nearly to its utmost limits, unless the peritoneal disease has supervened in consequence of the extension of inflammation from adjoining viscera. We scarcely remember a single case, excepting those of consecutive peritonitis, amongst the many hundreds of *post mortem* examinations made by us, of inflammation being present in a very decided form in the peritoneal coat of the small intestines, and attended with the exudation of coagulable lymph, where there were not found, upon examination of the interior tunics, still more marked appearances of disease, and where either extensive ulceration, great softening of the texture of the coats, or actual sphacelation of the mucous and cellular tissues internal to the peritoneal covering, was not observed. Not infrequently, indeed, all these appearances are detected in the same case, in different parts of the tube. When, however, the peritoneal inflammation has extended itself to the intestines from the liver, cæcum, colon, or some other viscus, or has supervened in consequence of the escape of foreign matters into the peritoneal cavity, the internal tunics of the small bowels are generally free from any further disease than an

increased vascularity in some places, and softening of their tissue. These points are important as regards the history of the disease, and the precise seat of it, during its early stages.

Inflammation of the small intestines, originating in the mucous coat, as observed in Indian and intertropical practice, generally commences with a morbid condition of the alvine evacuations. The bowels are seldom obstinately constipated, but they are sometimes costive. They are more frequently, however, laxer than natural; and often considerable diarrhœa is present. The stools are generally morbid, and of various colours in different cases; and frequently changing their character in the same case. The motions are offensive, more or less dark-coloured, and watery, and attended with griping pains about the umbilical region, which at first are not increased upon pressure. The abdomen is generally tumid; and the urine high-coloured and passed in small quantity. In some cases the stools are pale, fluid, and frothy, resembling fermenting yeast; at other times they are green, slimy, or gelatinous; and as the disease advances, they usually are of a dark green, variegated with lighter shades of colours, or with brown or yellowish-brown streaks; and at last they become very dark and grumous. Sometimes they are bloody; but this appearance is most frequently met with when the mucous surface of the large bowel, or of the cæcum, also becomes inflamed.

As the inflammation of the small intestines, thus commencing in the mucous tissue, proceeds through to the adjoining coats of the bowel, the griping pains, which evidently, from the very morbid and irregular state of the motions, arose from the irritation of diseased secretions, are converted into a sensation of internal soreness, sometimes with a feeling of heat. Firm pressure, which was borne heretofore without much increase of pain, now occasions a marked aggravation of it. The stools become scanty, and are attended with increased pain of a griping character. The tongue is white and excited, red at the point and sides, and foul and coated, especially in the middle and towards its base. There is usually much prostration of strength, especially of the lower limbs; the pulse is soft, quick, and frequently small;

nausea and sickness supervene, with increased sensibility, heat in the abdomen, and much thirst.

As the disease advances through the substance of the intestine, the abdomen becomes more tumid and painful; tenesmus frequently supervenes, and the stools are watery, mucous, and often of a brick-red colour, and sometimes streaked with blood, more particularly if the inflammation extends to the large bowels. In the more chronic cases, the tongue becomes cleaner during the advanced stage of the disease, and assumes a dusky-red appearance, and is sometimes smooth and lobulated, particularly when the disease is complicated with morbid structure of the liver. In the advanced stage, the inflammatory action often involves all the coats of the intestine, proceeding from the mucous surface to the subjacent cellular texture as far as the peritoneal tunic, which is the last affected; and extends along the mucous surface to the large intestines on the one hand, and to the duodenum on the other, superinducing many of the symptoms of dysentery, with pain extending to the epigastrium and right hypochondrium, and great irritability of stomach.

Inflammation of the bowels, as now described, may be viewed as commencing in the small intestines generally, without reference to the particular part of them which first becomes its seat. When the disease most unequivocally proceeds from the acrid state of the biliary secretions, we are disposed to believe that the duodenum, or at least the upper portions of the small intestines, are first affected, the disease being either more or less limited to them, or extending itself to the stomach on the one side, or to the large intestines on the other, or to both, according to the particular states of predisposition possessed at the time by those viscera. The vomiting which frequently accompanies the commencement of intestinal inflammation, and which depends upon the irritation of morbid secretions and the quantity of bitter and disagreeable matter thrown up from the stomach in these cases, are confirmatory of our opinion on this point. In the majority of these instances of disease, the original disorder is to be looked for in the liver; and

our remedial means ought therefore to be directed to it as well as to the consecutive disease.

It not infrequently happens, when the inflammatory state is induced in the duodenum by the flow of an acrid biliary fluid into it, that the turgescence of the mucous tunic of the intestine, about the mouth of the common duct, as well as of the lower portion of the duct itself, tends so completely to narrow, or even altogether to obstruct the flow of bile, as to occasion accumulations of this secretion in the gall-bladder and hepatic ducts. When this is the case, the morbid bile retained in the liver and gall-bladder heightens the inflammatory state of this organ, and even tends to promote the occurrence of the worst consequences of this condition, more especially abscess of the organ. Hence it is that but few cases of inflammation of the small intestines, terminating fatally, are met with in India, uncomplicated with appearances of disease of the liver, especially congestion and abscess, the one being related with the other, as respects cause and effect, in the manner now pointed out.

When jaundice is observed, either as a symptom of inflammatory disorder of the biliary organs, or as an attendant upon a morbid state of the bowels, we have no doubt that it is often induced in the manner stated above, particularly when the inflammatory turgescence of the mucous coat of the duodenum extends into the entrance of the common duct, and obstructs the flow of bile into the bowels. This state of the mucous surface of the duodenum may be more strongly suspected when, in addition to the signs above alluded to, the acute symptoms of biliary calculi being absent, the stools betray a partial or total deficiency of bile.

If inflammation of the small intestines commence in what has been usually called the phlegmonoid form, or seize at once upon the substance of the intestine, the symptoms, from the commencement, are much more acute. The patient complains of sharp pains around the umbilicus and lower part of the abdomen, with a quick, small, and contracted pulse; a foul, white, and excited tongue; and an irregular state of the bowels, which are generally

not completely constipated, yet are very scantily acted upon, and often require frequent doses of cathartics to open them fully, until after depletions and other means of cure have been employed.

When the disease attacks the patient in this manner, its progress is very rapid. The countenance soon becomes anxious; the pain is increased upon slight pressure; the urine scanty and very high-coloured; the respiration suppressed, owing to the increased pain proceeding from full inspirations; the skin is hot and harsh, especially over the abdomen; the stomach irritable, and vomitings supervene; the tongue becomes more deeply coated with a yellow, brown, or very dark fur; the abdomen more tumid and more painful; and the calls to stool more unsatisfactory, and attended with little or no relief. If the disease still makes progress, all the symptoms increase in violence; the countenance becomes sharp and anxious; the patient keeps his legs drawn up close to the abdomen, and lies on his back; the pulse is small, quick, and weak; the hands and feet are cold and clammy, whilst the abdomen is hot; the patient feels a sense of internal heat, which is often very remarkable from the commencement of the disease; the impatience of pressure on the abdomen increases; and the affection of the stomach becomes more urgent.

As the inflammation affects more the peritoneal covering, and extends along it, the symptoms assume an acuter character; the pain is then often violent, although this is not always the case; the pulse harder and more contracted; the skin hotter and drier; the urine more scanty and higher coloured; the soreness and tenderness of the abdomen upon the slightest pressure more remarkable, and the tumefaction much greater. When the inflammation extends throughout the greater part of this surface, the symptoms become more general; the abdominal fulness increases greatly; the soreness and pain are more diffused over the abdomen, and extend to both hypochondria and to the hypogastric region; the bowels are acted upon with greater difficulty, and the stools more scanty, even when they are not procured by the assistance of medicine; and hiccup, or dyspnœa, from spasmodic action of the diaphragm, occasionally supervenes.

When gangrene takes place, all the painful symptoms subside; fainting, great exhaustion, sinkings, cold sweats, hurried respiration, and a scarcely perceptible state of pulse supervene, with increase of the abdominal fulness, and diminution of pain on pressure. Hiccup is now present and becomes distressing, although it may not previously have made its appearance, with the *facies Hippocratica*, and a remarkably increased action of the nostrils.

An unfavourable termination of the disease does not always supervene in this way. It may also take place in consequence of the extension of the inflammation to the peritoneal surfaces, including the omentum; the serous surfaces of the small and large intestines and the omentum being glued together by coagulable lymph thrown out during the inflammatory process. On many occasions the inflammation extends itself to the adjoining viscera, they also forming adhesions to the parts in their vicinity, and even to the abdominal parietes. Thus the patient sinks rapidly under the extent of disease and its acute character, before gangrene commences.

Inflammation of the small intestines, commencing in the mucous surface, generally assumes a more chronic character, as respects the duration of the disease, and a milder form as regards the acuteness of the symptoms, than enteritis attacking at once the substance of the intestine. When this form of the disease terminates unfavourably, the inflammation of the internal surface becomes more intense, is accompanied with an abundant muco-purulent discharge, with ulceration generally commencing in the follicular glands, and extending through the substance of the bowel to the peritoneal covering on the one hand, and along the mucous surface into the cæcum on the other, giving rise to the symptoms of dysentery, and to excoriation and ulceration of the internal coats. At last the inflammatory action, in its progress, extends to the peritoneum; and the patient sinks from the extent of disease, as in the phlegmonoid form of enteritis, in some cases with evident sphacelation of the internal or villous coat of either the small or large intestines, and occasionally of both.

The favourable termination of enteritis is generally indicated by the

diminished severity of the painful and urgent symptoms from the treatment adopted; by the decrease of general fever; the obtaining of copious and free alvine evacuations; a more copious flow of urine, of a paler colour; by the tongue becoming more clean and moist; and a diminution of abdominal tenderness, soreness, and tumefaction.

The intertropical practitioner must expect to observe enteritis, in one of the two forms into which we have divided the disease, supervene to functional or organic affections of the liver, especially those accompanied with a morbid secretion of bile. He will also have occasion to remark the supervention of hepatitis to the enteritic malady; and, on many occasions, he will observe the extension of inflammatory action from the large to the small intestines.

Not only will disease of the one viscus thus supervene upon the malady of the other, but both will often present themselves to the practitioner, complicated in such a manner as to render it a point of great difficulty to determine which was the original disorder, and what share the one had in the production of the other. Thus, hepatitis is often co-existent with enteritis, and enteritis with inflammatory dysentery,—inflammation in this latter complication having extended to both the small and large intestines. Occasionally, gastritis and enteritis also co-exist, but more frequently the latter supervenes to the former. With respect to the complication of hepatitis, enteritis, and dysentery, it is often impossible to determine which was primary: hepatitis seems to us most frequently to originate the other two maladies, when it is complicated with them; but yet we cannot admit that such is uniformly the case, as we have not infrequently seen hepatitis supervene to both enteritis and dysentery, although it evidently did not exist at their commencement.

With respect to the appearances exhibited, upon examination after death, of those who die of inflammation of the bowels, it is necessary that we should offer some remarks. Inflammation of the small intestines is met with in pathological research, either as the chief diseased appearance, or as subordinate

to some other organic change. When it occurs as the former, it may be generally viewed as the idiopathic or primary disease, although this is not always the case; when it is observed in the latter condition, it may be considered as the consequence of the more important and more complete organic changes with which it is complicated. In each of these relations we shall now consider inflammation of the small intestines; premising that, when it takes place primarily, and terminates fatally, the most severe consequences of disease are observed; and that, when it supervenes to other diseases, death resulting chiefly from them, it presents every grade of severity, from the slightest inflammatory blush to the deepest ulceration, or even sphacelation. It is most frequently observed in warm climates, and especially in India, as we have already stated, consecutively upon disease of the liver and inflammation of the large bowels. When present in connexion with disease of the liver, it may be considered as the consequence of the morbid secretions of this viscus; when occurring in the course of dysentery or inflammation of the colon, it may have proceeded either from the morbid state of the bile, particularly if the liver betray any marks of disease, or from the extension of the inflammatory action from the mucous surface of the cæcum to that of the ilium. In some cases also, inflammation commencing in the mucous surface of the stomach will extend to the duodenum; and if the secretions poured into this latter viscus be of an irritating or acrid nature at the time, the already existing inflammatory action will be considerably aggravated thereby, particularly in this situation, and may be extended to the greater part of the intestinal canal.

When enteritis supervenes to inflammation of the stomach, liver, or large bowels,—the disease of these organs occasioning death, and thus furnishing an opportunity of examining the appearances which inflammation of the small intestines exhibits in its early stages,—the mucous coat of the canal is then generally more vascular and florid than natural; it is also more turgescient, particularly the valvulæ conniventes; and in many places the mucous glands are considerably developed, and marked by a deeper tinge of colour. These appearances are generally not uniform throughout the canal, but are most remarkable in the duodenum, jejunum, and upper

portion of the ilium, when the inflammatory condition has been induced by a morbid state of the biliary secretions, or has been consecutive upon marked disease of the stomach; and they frequently are present in considerable patches, or broad streaks, leaving intermediate spaces of a nearly healthy state. The lower portion of the ilium, however, is oftenest found diseased in its mucous surface upon *post mortem* examination, and ulceration is most frequently seated in this part of the small intestines, owing, probably, to the greater accumulation of fæcal and morbid matters in this part of the tube, particularly when any obstacle to the passage of the intestinal contents along the colon is present: and when the inflammatory condition has been the consequence of great disease of the large bowels, the ilium, particularly its lower portion, usually presents the most marked appearances of disease.

At the same time that the mucous coat is thus rendered more vascular and turgid than natural, it generally also becomes softer; and if the inflammatory state has reached its utmost, this tunic assumes a brick-red tinge, is apparently thickened, and very easily detached from the subjacent coat, the cellular tissue connecting it being soft, turgid, and inflamed. When this state exists through a considerable portion of the canal, the coats of the intestines are apparently thickened, arising from the inflammation having extended from the internal surface through the cellular substance connecting the tunics of the intestines, till the attached surface of the peritoneal covering is even approached in some parts. When this is the case, the substance of the small bowels may be considered as being affected, even although the external surface of the part may present no further marks of inflammation than red vessels ramified through it. Occasionally, however, in addition to the state of the parts already described, the red capillaries, scattered in the inflamed peritoneal surface of the intestine, are evidently connected with the effusion of coagulable lymph, particularly in those situations where they are most numerous and manifest, the lymph being effused in specks or considerable spots, upon the serous surface. When these appearances are remarked upon the exterior surface of the inflamed intestine, the interior frequently presents more serious changes than we have yet described. The

mucous surface has a deeply-inflamed and excoriated appearance, with smaller portions of a dark or sphacelated hue, and with ulcerated specks, or even large ulcers, which have nearly penetrated as far as the external covering of the intestine. In some cases, one or more of these ulcers have actually made their way through the peritoneum also, and the contents of the bowel have thus been partly discharged into the cavity of the abdomen. In some cases, the ulcer has been attached at its margin to an opposite convolution of the intestines, and thus been prevented from allowing the escape of the faecal matters into the peritoneal sac. In others, the peritoneal surface has been covered with coagulable lymph in the progress of the ulcerations through this membrane, and the ulcers been plugged up, or rather covered over, by the lymph effused.

When the small intestines are ulcerated from consecutive disease, the places adjoining the ulcers present various states of organic change. In some cases, they are thickened, softened, and injected; in others, they are pale ash-coloured, even thinner than usual, and presenting no inflammatory appearances, excepting in the margin of the ulcerated part. When the ulcers are large they are generally few in number, and with considerable spaces or even portions of intestine intervening between them. Sometimes they are as small as mustard-seed, numerous, and collected in one particular part, leaving large spaces or even portions of the intestines in a healthy or at least slightly inflamed state. When the ulcers are thus small and conglomerated, they are generally surrounded by an elevated base, and are evidently seated in the mucous follicles and vicinity, constituting a distinct variety of ulceration from the large, distinct, and rare ulcers previously described.

Ulceration seated in the mucous follicles has generally an elevated margin and base, and a deep indentation in the centre, of a darker colour than the surrounding margin. In addition to this state of the follicles, the inflamed mucous surface also presents excoriated portions, with patches entirely devoid of a mucous coat; and in the most acute cases the mucous membrane is sphacelated in large patches.

In the forms of enteritis in which the inflammation commences in the substance of the intestine, or in its peritoneal coat, or in which it extends itself speedily to these parts, the whole of the coats of the bowel are very vascular, red, or of a brick-red colour, and readily lacerated. Coagulable lymph is generally effused upon the peritoneal surface, either in distinct clots, or as a general film, of greater or less thickness, and gluing the intestinal convolutions to each other, and to the adjoining viscera and surfaces. In these cases the omentum generally has participated in the inflammatory action, and is either found more than naturally vascular, united to the bowels underneath, or occasionally drawn up irregularly to the arch and flexures of the colon.

If the *post mortem* examination be performed, as we generally performed it, within a very hours from death, the vascularity of the inflamed parts will be very great; and although the colour of the most remarkably diseased parts may be beginning to change, indicating the commencement of the gangrenous process, yet complete gangrene of the substance of the intestine is not so frequently met with as is generally supposed, at so early a period of examination. It is, however, very common to find the mucous surface apparently sphacelated in places adjoining to the ulcerated portions of the intestines, and the external coat of the same part presenting merely a bluish tint, but not altogether deprived of its cohesion, although it is more easily lacerated than in the healthy state.*

When inflammation of the small intestines, whether commencing in their mucous surface, in their substance, or in their peritoneal covering, is neglected or badly treated, it not infrequently gives rise to a state of chronic disease, or chronic inflammatory action, in some one or more of the coats of the intestine, when it does not terminate in organic change of some other kind, more speedily tending to the destruction of life, such as we have already described. A very large proportion of men who return from India disabled and invalided, suffer under the consequence of this neglect.

* See the appearances of the bowels upon dissection, as exhibited in Plates.

In many of them we have found, in addition to chronic affections of the liver and symptoms of chronic dysentery, and even independently of these, a peculiar tightness and dryness of the skin covering the abdomen, giving the surface a parchment-like appearance, the abdominal contents being apparently drawn back upon the spine, and the belly presenting a singularly empty or hollow form. Upon minute examination, during the life of the patient, the abdominal parietes seem as if formed of a single layer, the skin being firmly attached to the abdominal muscles underneath; and the small intestines may be often distinctly felt in the umbilical region, in a hard or pulpy state.

Upon examination after death, the parietes of the abdomen are particularly thin; the integuments on the one side, and the peritoneum on the other, being firmly and intimately attached to the abdominal muscles, which are much wasted, little or no cellular substance seeming to intervene between these textures. The omentum generally presents an appearance which resembles a leucophlegmatic state, being diaphanous, and its cells loaded with a watery fluid, and, in many places, with a hard, fatty-like matter. The peritoneum is generally pale, and sometimes free from adhesions; at other times adhering in various places. The small intestines are generally of a pale colour, much contracted, and lined with a copious exudation of a thick, cream-coloured, viscid matter, which frequently seems to fill their calibre, to glue their internal surface, and to obstruct their canal. The large intestines are distended with flatus, their coats nearly transparent and empty. The mesentery generally presents a watery or leucophlegmatic appearance. In such cases, the principal disease seems to be seated chiefly in the small intestines.

The following cases will further illustrate the history of inflammation of the small intestines in the more simple forms in which it occurs in warm climates. When complicated with, or supervening to, hepatitis, it has already been alluded to; and it will receive some notice in the sequel, as consequent upon dysentery and fever.

CASE CXXXV. — *Inflammation of the small Intestines, commencing in the Mucous Surface, and extending to the Colon.*

GEORGE MEACKIE, Madras European Regiment, ætat. 24, admitted into hospital 3d of August, 1819. Says he has been unwell for two or three days, with frequent purging; he passed a great deal of viscid, glairy mucus, and complains of heavy dull pain across the umbilicus, deep seated, with tension and fulness in the abdomen, but no pain on external pressure; skin natural; tongue white and excited. — Apply eighteen leeches to the belly, and fomentations. R Pulv. julap. comp. ʒj.; aquæ menth. pip. ʒiij. M. ft. haust. stat. sumend.

Evening. — The medicine procured frequent and copious stools, watery, of a dirty brown colour, with quantities of glairy, viscid mucus at the bottom of the vessel; he feels much relieved. — Calom. gr. xx. h. s.; et repet. pulv. purg. early in the morning.

4th. — Vomited a great deal in the night, and was very restless; threw up much green and bitter matter; tongue white and excited, rather foul; feels a deep pain and cutting in his bowels, and he strains in passing his motions; the pulse is oppressed; skin moist and warm, but not hot; feels no pain on pressure, but the abdomen is hard and loaded. — Has taken the pulv. jalap. comp. Enema purg. stat.

Evening. — Had full and copious motions; the abdomen is still tense and full; feels difficulty in voiding his urine; motions fluid, dark-coloured, and full of glairy, viscid mucus. — Repet. enema purg. stat. Calom. gr. xx. h. s.

5th. — Has passed a better night. — Mist. purg. ʒjv. stat.

Evening. — Stools of a green colour, and copious; less straining; tongue still excited and foul; pulse and skin natural; pain diminished, but not removed. — Repet. calom. gr. xx. h. s. s. Mist. purg. ʒjv. cras mane sumend.

6th. — Had frequent black-coloured stools, very copious and viscid; tongue less excited, but loaded; pulse regular; skin moist. The mixture is still operating.

Evening. — His motions have been less watery, but still viscid and black. — Repet. calom. gr. xij. h. s.; et repet. mist. purg. ʒjv. cras mane sumend.

7th. — Has taken the purgative; it is acting; motions the same; had some sickness.

Evening. — Has had some straining, but not of any consequence; tongue more natural; feels a little sickness at stomach, and has passed some yellow viscid motions. — Haust. amar. cum sennâ, ʒij. nocte maneque.

8th. — Feels much better in every respect; his tongue is clean and healthy; he has no pain; but the motions are still viscid and full of mucus. — Repet. haust.

amar. cum sennâ, \bar{z} ij.; sulph. magnes. \bar{z} ij. M.; nocte maneque. These were continued till the 13th, when the motions became natural, and he was perfectly well, and discharged.

Remarks.—The great fulness of the abdomen indicated the necessity for the employment of purgatives. The quantity of mucus brought away was extremely great, and entirely disappeared before the purgative treatment.

CASE CXXXVI. — *Inflammation of the Intestines, commencing in their Substance.*

JAMES WARNER, ætat. 25, admitted 20th February 1817, at Karnoul; was seized early this morning, probably from exposure to the cold dews, with excruciating pain in his belly, general soreness and fulness; says his bowels have been confined for three or four days; pulse sharp and small, very frequent; tongue white, dry. — Apply twenty leeches over the abdomen. Mist. purg. \bar{z} jv. stat.

Evening. — Stools crude, a good deal griped; pain relieved by the leeches; tongue still dry, white, and excited; pulse soft, full, and strong, but he cannot bear the least pressure over the abdomen. — Repeat twenty leeches immediately; and, after the bleeding has stopped, apply a large poultice. Calom. gr. xij.; pulv. Jacobi, gr. vj. Ft. pilul. h. s. s. Mist. salin. febrif. cum vin. antim. every two or three hours.

21st. — Vomited very frequently in the night, and threw up much green bile; he has bitter taste in his mouth; tongue less excited and foul; pain infinitely less; skin cool; pulse frequent; motions of an olive colour. — Mist. emetic. stat.

Evening. — Has been fully vomited, and threw up much green bile; pulse full and soft; no pain at all in his belly. — Calom. gr. xij.; opii, gr. j. h. s. s.

22d. — Motions tenacious and green, tinged with blood; tongue cleaner; pulse quite natural; has some pain in his back; makes water freely. — Enema purg. Mist. purg. \bar{z} ij. cum magnes. vitriol. \bar{z} ij. stat.

Evening. — Tongue dry; stools copious and watery; pulse soft, 80 in a minute; no pain whatever. — Repet. calom. gr. xij. h. s. Cont. mist. salin.

23d. — Motions feculent and green; tongue dry and white; no pain; pulse good. — Mist. purg. Enema purg. Cont. mist. salin. febrif. ut antea.

Evening. — Considerably better in every respect this evening; tongue clean and moist; pulse good; stools mucous, with green, watery fluid, and a little pure blood; no pain of any kind. — Repet. calom. h. s. s. Cont. mist. salin.

24th. — Improving. — Cont. mist. purg. et mist. salin.

Evening. — Stools perfectly natural. — Haust. amar. cum sennâ, \bar{z} ij. nocte maneque.

25th. — Quite well. These draughts were continued till the 28th, when he was perfectly recovered, and returned to his duty.

Remarks. — This case furnishes an example of the most usual form of the uncomplicated phlegmonoid enteritis, and of its course, as observed in Indian practice. The treatment was appropriate and efficacious.

CASE CXXXVII. — *Inflammation of the small Intestines, from morbid Secretions commencing in the Mucous Tunic, extending to their Substance and to the large Bowels.*

WILLIAM BURRELL, recruit, lately arrived in India, admitted into hospital 29th July, 1813, at Wallajahbad.

Evening. — Has had looseness in his bowels for four or five days past, but, considering it of no consequence, did not complain till the pain became severe. He has now pain in the epigastric region and round the umbilicus, and his motions are very frequent, attended with griping, but no straining; tongue clean; appetite impaired. — Calom. gr. v. h. s. s.

30th. — Motions of a grass-green colour, and gelatinous. — Ol. ricin. ℥ij.

Evening. — Complains of a fixed acute pain over the umbilicus, which is increased on the slightest pressure; pulse frequent; motions scanty, not so green. — Fifteen leeches to the belly, and apply fomentations. Enema purg. stat.; et repet. calom. gr. v. horâ somni.

31st. — The abdomen easier; motions the same as yesterday; has some pain in the right side; no griping or straining. — Cont. fomentations. Aquæ Chelt. ℔j.

Evening. — Has acute pain immediately under the right hypochondrium, very tender to the touch, and constant; motions exceedingly dark-coloured, and very fetid. — Apply ten leeches. Repet. calom. gr. v. h. s. s.; et repet. enema.

August 1st. — The soreness and tenderness of the belly continue; stools frequent, highly bilious and offensive; has been twice bled by leeches over the belly, with very little relief. — Ol. ricin. ℥ij. stat.

Evening. — Motions slimy; the oil has operated well; no relief from pain. — Calom. gr. iij. h. s. s. Apply a blister over the belly.

2d. — No alteration. — Enema emol. three times a day.

Evening. — Stools scanty, and fluid in appearance, resembling the washings of meat; has still, he says, much pain in the region of the umbilicus, but neither griping nor straining; skin cool; pulse not frequent; appears depressed in spirits. — Calom. gr. ij. nocte maneque. Enema purg.

3d. — Belly rather easier; stools less frequent, but still watery, and tinged with blood. — Enema emol.

4th. — No appearance of fæces in his stools, which are watery, tinged with blood; has rather more pain in the bowels, and passed an uneasy night. — Ol. ricin. ʒij.

Evening. — The oil has not operated; he has frequent inclination to relieve his bowels, without the power. — Enema purg.

5th. — Had two stools after the enema, of a dark colour, but feculent; is not altogether free from pain in his belly, but he says he is always much relieved after free evacuations from his bowels; he is very weak. — Aquæ Cheltenham. ℥bj.

Evening. — Stools dark and watery, mixed with coagulated blood; has a constant desire to avoid them, and feels an increase of pain in his bowels, and straining. — Calom. gr. v. h. s. s.

6th. — No change; great debility and emaciation; appetite quite gone. — Ol. ricini, ʒij.

7th. — Stools watery, very feculent and scanty, mixed with coagulated mucus and blood; griping, with some straining. — Enema emol.

Evening. — Very frequent desire to go to stool, without being able to void any thing except a little thin, watery, slimy matter. — Enema purg. stat. Cont. pilul. ut antea.

8th. — Stools nearly of a natural colour, and contained formed fæces; bowels still griped, and the pain undiminished. — Aquæ Cheltenham. ℥bj. This operated mildly; and in the evening an emollient enema was given.

9th. — Much debilitated, and daily losing flesh; in other respects the same. — R Calomel. gr. ij.; ipecac. pulv. gr. j. Ft. pilul. nocte maneque. Enema emolliens ut antea.

10th. — Felt considerable ease after taking the pill yesterday; passes his stools more freely, and they have a better colour; very little griping. Cont. pilul., &c., ut antea.

Evening. — Eight small, smooth, greenish-coloured stools; less pain in his belly. — Cont. pilul. et enema, ut antea.

11th. — Cont. — 12th. No stool in the night. — Enema purg.

13th. — Ol. ricini, ʒij.

14th. — Is free from griping and straining; stools scanty, and of an orange colour; thinks himself better. — Cont.

15th. — Bowels griped, and he has been more purged. — Omit the pills. Enema emolliens.

16th. — Bowels relieved ; stools less frequent, and of a better appearance. — Repet. enema emolliens. — 17th. Cont.

18th. — Stools scanty, and consist almost entirely of mucus, tinged of a grass-green colour ; no straining. — Aq. Cheltenham. lbj.

Evening. — Stools of a greenish colour, mixed with blood and vitiated bile ; bowels uneasy and occasionally griped. — Calomel. gr. jv. Enema emolliens.

21st. — No stool since yesterday ; looks improved, and he feels quite easy.

22d. — Stools of a natural colour and consistence ; he complains only of debility ; appetite very much improved. The enema was continued till the 26th, when he was sufficiently recovered to return to his duty.

Remarks. — This case was treated by a very well-educated physician, who had not been many months in India, and was serving with the regiment during our absence on duty at Seringapatam. The feeble efforts to subdue this disease in its early stages arose from the fear of bolder measures. It was a matter of much surprise that the patient did not fall a sacrifice to the mode of treatment adopted ; and his recovery is certainly more to be attributed to his own constitution than to the efforts of his medical attendant ; but that state of ill health supervened which rendered him entirely unfit for military duty, and he was, after remaining many months in the hospital, discharged from the service.

General and local bleeding should have been prescribed immediately ; in place of which, leeches were not applied until the evening of the second day, and then the number was so small that no advantage could be reasonably expected from them. The five grains of calomel were equally inefficient. The case is deserving attention, as shewing the consequence of a trifling mode of practice in the diseases of warm climates, even when they are apparently not very acute, and as illustrating the very frequent form of enteritis in India ; — the diarrhœa, with little or no pain at first ; the morbid state of the secretions ; the increase of pain and phlegmonoid character of the disease, as the inflammation extended through the coats of the intestines ; the progress of the inflammation to the large bowels, with the attendant signs of dysentery, — are all well shewn in this case.

CASE CXXXVIII. — *Inflammation of the Bowels, commencing in the Peritoneal Covering, and extending to the Liver. — Treatment active and appropriate.*

September 18th, 1816. — CHRISTOPHER SMITH, Madras European Regiment, ætat. 26 ; recent arrival from England : was attacked on the march this morning with violent pain over the whole abdomen ; considerable fulness and tension, with excessive

soreness on the slightest pressure; pulse full and strong; some sickness at stomach; skin hot; tongue white and excited, and great thirst. He slept outside the tent, and was exposed to the dews. — Take $\bar{\text{z}}$ xxviiij. of blood from his arm immediately; foment the abdomen; and give $\bar{\text{z}}$ ij. ol. ricini.

Evening.—The blood was dark-coloured, not buffy, but a little cupped; his bowels have been acted upon very slightly; nothing particular in the appearance of his motions; thinks he is a little relieved, though the pain continues severe. — Apply eighteen leeches over the abdomen. Calom. gr. xx.; opii puri, gr. ij. h. s.

19th.—Very little improvement, though the pain in his belly is certainly less than it was, but he now complains of pain in his head. — Apply fourteen leeches over the belly, and twelve to the temples. Mist. purg. $\bar{\text{z}}$ ij. statim.

Evening.—Very much relieved in every respect. — Repet. pilul. calom. gr. xx. h. s.

20th.—Was seized in the night suddenly with a very severe darting pain in the right side, in the region of the liver; abdomen still painful, particularly on pressure, but less otherwise; head relieved by the leeches; pulse frequent and full; tongue less excited; bowels relieved; no morbid appearance in his motions. — Repet. mist. purg. Apply fourteen leeches to the hypochondriac region, and a large poultice over the whole abdomen.

Evening.—Much less pain generally, though it still continues; he cannot bear pressure, nor can he lay in any position but on his back; pulse full, not frequent; has some difficulty in breathing. — Repeat fourteen leeches along the margin of the diaphragm. Repet. calom. gr. xx.

21st.—Considerably better this morning. — Repet. mist. purg. $\bar{\text{z}}$ iiij. ut antea.

Evening.—Well purged; much better; can breathe with more ease; pulse rather quick and full; skin warm, but moist; tongue less excited, and moist also. — Repet. pilul., calom. gr. xx., et mist. purg. p. m.

22d.—Pain much decreased, and he has a better pulse, but there is very great soreness over the whole abdomen, and some fulness. — Apply a large blister immediately, and repeat calomel at bed-time.

23d.—Blister has risen well, and is so painful he cannot say exactly how he is; very thirsty; skin hot and rather dry. — Mist. purg. Mist. salin. febrif. comp. every two or three hours.

Evening.—Pulse 96; skin warm; pain, he thinks, quite gone; blister very distressing; has been well purged; no straining. — Repet. calom. gr. xx. h. s. s.

24th.—Had a good deal of uneasiness in the night; his tongue is dry, and pulse 102 in a minute; bowels well acted upon; skin warm and moist; he can bear pressure over the abdomen, but he has still pain at the diaphragm; mouth slightly affected;

(has taken ʒij. of calomel in six days.)—Apply twenty leeches on the right side, from the spine to the sternum. Mist. purg. ut antea. Repet. mist. salin. febrif.

Evening.—Feels much easier this evening after the leeches, which bled very well; pulse continues quick and full; bowels well acted upon; motions natural.—Repet. calom. gr. xx; opii, gr. ij. h. s. s.

25th.—Passed an excellent night; he is much better this morning in every respect; pulse 96, regular; tongue cleaner; pain not quite removed, but it is very much subdued.—Mist. purg. ʒjv. Repet. mist. salin. comp. et enema purg.

Evening.—Can lay upon either side with perfect ease.—Cont. calom. ut antea.

26th.—Very much better; pulse soft and good; skin cool and natural; tongue healthy; mouth less affected than it was on the 24th.—Mist. purg. ut antea. R Calom. gr. xij.; opii, gr. j. Ft. pilul. h. s. Rub. ʒss. unguent. mercur. on the abdomen and side.

This was continued without interruption till the 4th October, when the pain in his side returned with some violence.—Fourteen leeches were immediately applied, twelve grains of calomel at bed-time, and the purging draught in the morning, which relieved him immediately. The calomel and purging draught were continued till the 8th, when his gums began to swell, but there was no ptyalism; he is now perfectly free from pain, but feels weak.—Decoct. cinchon. cum acid. vitriol. three times a day.

He returned to his duty, perfectly recovered, on the 15th.

Remarks.—This case exemplifies a very frequent cause of enteritis, when seated in the substance of the bowel, as observed in India. In this patient the inflammation evidently commenced in the peritoneal coat of the bowels, from the general and acute pain, with general tumefaction and great soreness on the slightest pressure. As we have already stated, enteritis commencing in this manner is comparatively rarely met with in the East. During treatment, it will be observed that hepatitis supervened, and was complicated with enteritis during its course, the hepatitis afterwards becoming the chief disease, and demanding an appropriate treatment. It will be perceived, in this and other cases, that a large dose of calomel and opium was exhibited soon after the vascular depletions. This practice, which has been pursued by us and other Indian practitioners for many years, we perceive has been recently recommended by a physician in London, with an appearance of originality to which he has no claim, intertropical writers having furnished him with every information on this subject.*

* The reader is requested to turn to Plates XIII., XXII., XXIV., and XXV., for illustrations of the appearances observed after death in the most frequent forms of inflammations of the small intestines. See also the explanations accompanying these Plates.

SECTION II.

Of the Treatment of Inflammations of the Small Intestines.

ENTERITIS, as it is met with in warm climates, requires the most energetic and prompt treatment within the resources of the medical art, more especially when the inflammation attacks the substance of the intestine, or its peritoneal coat. When inflammatory action supervenes in the mucous tissue, although the symptoms are milder and the disease less active, yet the treatment should likewise be decisive; for we know not how soon inflammation may extend itself, if it be not already proceeding through the substance of the bowel on the one hand, and along its canal on the other. In some habits and constitutions, the extension of inflammatory action, in a warm country, is uncommonly rapid; and if it be not arrested at its commencement, the most decided and appropriate means will subsequently fail. A tendency to spontaneous resolutions of inflammatory actions ought never to be looked for in the European constitution, in an intertropical climate, and therefore should not be expected to assist in their removal. Functional disorders occasionally operate their own cure, by the increased discharges characterising their progress, or supervening in their advanced stages. But when inflammation is once established in an organ or structure of the body of an European residing in a hot country, unless controlled by very prompt and bold measures, it soon terminates in gangrene, in abscess, in effusion, or in a state of chronic inflammatory action, according to the nature of the part affected, and the habit and temperament of the patient.

When inflammation commences in the mucous surface of the bowels, we should never be induced, by the apparent mildness of the disease, to omit having recourse to very active local depletions. It should always be recollected by the junior or inexperienced practitioner, that, however mild may be the character of the disease, the mucous surface of the bowel, in some part of its extent, may be

very actively inflamed; the follicular glands underneath it may also be very seriously diseased, and the disorder may run rapidly into ulceration, without any more acute symptoms making their appearance. Therefore, if the patient complain at all of soreness, heat, or griping pain in the bowels; if the pulse be in any measure affected; if the motions be frequent, scanty, watery, mucous, and morbid in appearance; the tongue excited, white, or loaded; and still more especially if there be abdominal fulness, tension, soreness, sense of heat, which are increased upon a very firm pressure,—a large number of leeches should be immediately placed upon the abdomen. If the patient be at all plethoric, or have been previously in a tolerable state of health, from thirty to forty ounces of blood ought to be abstracted in this manner. When the leeches have entirely ceased to bleed, hot poultices should be applied over the abdomen, and frequently renewed; and twenty grains of calomel, with two grains, or even three, of opium, given immediately, if the leeches have been applied early in the day; but if they have been prescribed in the afternoon or evening, then the exhibition of the calomel and opium may be deferred till the time of repose.

If the more urgent symptoms are not altogether removed at the end of ten or twelve hours from the application of the leeches, the repetition of them will be requisite, but the number which should be applied will necessarily depend upon circumstances connected with particular cases. If the symptoms are acute, and the abdomen full and tender, then the decided local depletions already mentioned may be ventured upon, especially if the strength and habit of the patient be not much reduced. Hot poultices ought again to be applied, and the calomel and opium given as before.

The great advantages of hot poulticing are, that it tends more than any other remedy, particularly when the poultices are large and frequently renewed, and still more so if the calomel and opium have been given,—to determine the circulation to the surface of the body, to equalise its distribution, and to bring out a copious perspiration.

The practice of prescribing calomel and opium after vascular depletions,

has been long adopted in India, and it has been employed by us for many years, with the most beneficial effects, in all cases of inflammatory affections of any of the abdominal viscera. When given after a decided blood-letting, whether general or local, it frequently keeps down the vascular action nearly to the standard at which it was reduced by the blood-letting. It has also the great advantage of allaying the irritability of the stomach, when this symptom is present, more completely than other remedies; of tranquillising the nervous system, and disposing to sound repose,—measures most beneficial in preventing the return of inflammatory action after large depletions; and of changing the morbid character of the secretions, on which the disease so often depends, and fitting them for removal by means of the subsequent administration of purgatives.

If the vascular depletions have been performed in the morning, then the calomel and opium should be given immediately afterwards; and at the termination of four or five hours, a purgative, consisting either of castor oil, or the compound purging powder, or the purging mixture, may be administered, and its operation assisted by a cathartic enema. If the depletions have been practised late in the day, then the calomel and opium may be deferred until eight or nine o'clock, and the patient left to enjoy repose; after which the purgative, followed, in about three or four hours, by a cathartic enema, ought to be exhibited.

When a repetition or repetitions of the vascular depletions are requisite, the same method should be subsequently pursued, until the acute symptoms are entirely removed. The advantages of purges and aperients, particularly those which are of a mild and cooling quality, in this particular form of enteritis, are evident: they carry off the morbid secretions from which the disease frequently proceeds, and prevent the supervention of ulceration and the progress of the inflammatory action,—consequences frequently resulting from the retention of morbid matters in the *primæ viæ*, in warm climates. Similar advantages to those arising from the use of aperients and purgatives also proceed from administering aperient and emollient enemata. Medicines exhibited in this latter way prevent accumulations from forming in

the cells of the colon, and dissolve and remove them if they be already formed.

In the phlegmonoid forms of enteritis, when the inflammation seizes primarily upon the substance of the intestines, or when it commences in, or extends to, the peritoneal coat of the bowel, the vascular depletions should be immediate and most copious. If the patient be plethoric, young, and not reduced by previous disease, blood-letting from the arm to a considerable extent, followed by local depletion, is indispensably requisite. In these cases, the repeated application of hot poultices over the abdomen, and the exhibition of calomel and opium, as already recommended, should be always resorted to, and be followed by purgatives and cathartic enemata, in order to carry off offending matters.

During the intervals between the exhibition of those remedies, saline medicines may be prescribed, with a view of promoting perspiration and equalising the circulation: and in order still further to promote this effect, the hot poulticing already noticed may be persevered in for a long time after the local depletions, or a warm bath may be ordered.

If the biliary secretions be of a very morbid quality, the calomel and opium, in the full doses recommended, may be given twice daily, either until they assume a healthy character, or the mouth becomes affected; for, until a tolerably natural state of the bile is procured, we cannot expect a very permanent recovery from the disease. In addition to the calomel and opium, and after depletions have been carried as far as circumstances seem to indicate, mercurial ointment may be laid upon the surface of the hot poultices, which are to be applied to the abdomen, and repeated in this manner for a considerable time, or until one of the desired effects be produced.

With regard to the employment of blisters in the inflammatory affections of the bowels, much discretion is required on the part of the practitioner. If they be applied before inflammation is subdued, they either fail of being

serviceable, or they tend to aggravate the disease, unless they are so large as to occasion a complete revulsion of the capillary action to the blistered surface,—an effect which they can seldom produce, unless the inflammatory action is slight in degree or small in extent, or has been nearly altogether removed by the previous treatment. When the disease is subdued, or nearly so, the external inflammation produced by blisters frequently seems to prevent the return of the internal disorder: at this period, therefore, of the malady, they should seldom be omitted.

During convalescence from inflammatory affections of the small intestines, the diet of the patient ought to receive great attention. As soon as an appetite returns, it must be indulged in with great caution; and mild broths, and farinaceous articles of diet only, such as arrow-root, sago, &c., be given for some time. The patient ought to wear flannel next his skin, and be very careful not to expose himself to vicissitudes of temperature or to moisture.

The regular action of the bowels is a matter of the greatest consequence in convalescence from this disease, and should be promoted by mild and cooling aperients and laxatives, such as the soluble tartar, manna, the bitter aperient mixture, &c. At the same time the secretions, particularly the biliary secretion, require attention, and should be corrected whenever they betray any morbid tendency. For this purpose, the patient should take occasionally five or ten grains of blue-pill at bed-time, and have the abdomen sponged with the nitro-muriatic acid lotion, as previously recommended.

In the chronic cases of inflammation of the small intestines, supervening to neglect, or to a treatment which has been insufficiently active, where the state of the intestines, and other appearances, such as we described at the conclusion of the foregoing section, are observed, large doses of calomel, given at bed-time, followed by warm aromatic purgatives, and poulticing over the whole abdomen with the nitro-muriatic lotion, have been most serviceable in our practice. Large doses of calomel seem to act in a most appropriate and beneficial manner upon the thick, tenacious matter which seems to obstruct the calibre of the intestines in these cases, dissolving and detaching it from

the mucous surface to which it so closely adheres, and thus preparing it for the operation of the purgative which is to follow. It is the combination of the calomel with this morbid secretion, and the admixture of bile with both, which gives the stools the dark or greenish-black, or even the grayish-brown appearance, which they often present in these and similar cases.

CASE CXXXIX.—*Inflammation of the Substance of the Small Intestines, without Complications; Treatment decisive and appropriate.*

EDWARD O'BRIEN, ætat. 19, a full, healthy young man, recently arrived in India: was admitted the 18th September, on the march through the Mysore country, complaining of excessive pain around the umbilicus, and extending over the whole abdomen, with some fulness; skin cool; tongue white and excited; motions very small in quantity, but frequent; says he was not well this morning when we marched, but would not complain, lest he should be considered a sculker,—a notion which many of the men have, and which is often productive of serious mischief, as it prevents them from applying for medical aid till the disease has made alarming progress. This man cannot bear the least weight over the abdomen, and the pulse is full and sharp.—V. S. ad 3xxx., and apply eighteen leeches over the belly. Enema purg. stat., et calom. gr. xx., opii, gr. ij. h. s. s.

19th.—Much better this morning; tongue less excited.—Mist. purg. 3jv. stat.

Evening.—The pain in the abdomen entirely removed, but he feels pain in his head, and dislikes the light.—Apply sixteen leeches behind the ears, and repeat the calomel, h. s.

20th.—Feels quite well this morning, except some soreness over the belly; his tongue is clean; pulse good; skin natural; bowels free; motions hardened fæces, and very offensive; they have evidently been confined in the colon for some time.—Apply a blister over the belly. Repet. mist. purg. statim, et calom. gr. xx. h. s. s.

21st.—Bowels fully evacuated; motions offensive, but not morbid; the blister has acted well, and the soreness, he says, is quite removed.—Enema purg. Calom. gr. x.; opii, gr. j. h. s. s. Mist. amar. cum sennâ, 3ij. nocte maneque.

22d.—Feels no complaint but weakness.—Omit the calom. Cont. mist. amar. cum sennâ, 3ij. nocte maneque.

He took no other medicine, and on the 26th returned to his duty, perfectly recovered.

Remarks.—This case presents one of the least complicated instances of the

phlegmonoid form of enteritis, which are met with in Indian practice, the inflammation having attacked the substance of the small intestines, and extended no further. The treatment was here decided and appropriate.

CASE CXL.—*Inflammation of the Mucous Surface of the Small Intestines, extending to the Colon.*

JEREMIAH JONES, ætat. 18, has lately arrived in India: was admitted this evening, 3d May, 1817, with purging of scanty stools, but cannot tell the colour. Complains of pain round the umbilicus, and at the sigmoid flexure of the colon, particularly on pressure; pulse quick, not full; skin natural; tongue clean; has felt unwell for three or four days.—Apply twenty-five leeches over the belly. Calom. gr. xx. h. s. s.

4th.—Pulse hurried and irregular; the pain in his belly is relieved very much by the leeches; there is a fulness in the abdomen, but no pain on pressure.—Pulv. purg. ʒj. statim. Enema purg.

Evening.—Purged freely; stools quite black, and containing a great deal of viscid matter; complains of pain in his head; pulse regular; skin natural; tongue excited.—Apply twelve leeches to the temples.—Repet. calom. gr. xx. h. s. s. Mist. purg. ʒjv. cras mane sumend.

5th.—Much better this morning in every respect; tongue clean; no pain either in his belly or head; pulse regular; has taken the purgative, and it is operating; stools of a yellow colour, rather watery, with a great deal of glairy, viscid mucus, indicative of great excitement in the mucous coat of the bowel; very little fæces.—Repet. calom. et haust. purg.

6th.—Very fully and freely purged; motions precisely the same; skin cool; pulse regular; quite free from pain.—Omit. med.

7th.—Better in every respect; motions have more the appearance of natural fæces, and he is free from pain.—Haust. amar. cum sennâ, ʒij. nocte maneque.

This was continued for a week. He passed a great deal of viscid, tenacious mucus, after which his motions became regular, and he was discharged on the 14th.

CASE CXLI.—*Inflammation commencing in the Mucous Surface and extending to the Substance of the Intestines.*

ROBERT RAY, M. E. Regiment, an old soldier, ætat. 42; volunteer from H. M. 84th Regiment: admitted 7th August, 1819. Complains of a dull, deep-seated, and

heavy pain across the abdomen, particularly about the umbilicus; pulse quick, but not full; skin cool and moist; tongue foul and excited; was seized with vomiting about half an hour since; and was purged three or four times.—Apply twenty leeches around the umbilicus immediately, and give ℥ij. mist. purg. every two hours till he is fully purged.

Vespere.—Motions copious, of a dark-green colour, and sometimes yellow, watery, and full of glairy, viscid mucus; tongue excited, not foul; the pain relieved by the leeches, but he has still a deep aching pain in the belly; pulse firm and regular.—Calomel. gr. xx. h. s. Repet. mist. purg. ℥ij. cras mane sumend.

8th.—The pain has returned again, not so dull and heavy as it was, but it is fixed and sharp; tongue clean, but very much excited; pulse quick, a sharp beat and hard; the mixture is operating; he passes a great deal of slimy matter, of a green and yellow colour.—Apply fourteen leeches over the abdomen. Enema purg. stat. Calomel. gr. xx.; opii, gr. ij.; syr. q. s. Ft. pilul. h. s. s.

9th.—Tongue much less excited, and clean in the centre, but covered with yellow crust at the sides; pulse hurried and quick; has still deep-seated pain in his belly, but by no means so much as it was yesterday.—Mist. purg. stat. Mist. salin. febrif. every two hours.

Vespere.—Has been well purged, and has passed much viscid and glairy matter, with some green, viscid fæces; feels much less pain; pulse and skin natural.—Calomel. gr. x. Cont. mist. salin. febrif. Repet. mist. purg. ℥ij. cras mane sumend.

10th.—Tongue less excited and moist, but of a yellow colour; mouth affected with mercury very slightly; pulse good; skin natural; but he feels sick at stomach.—Cont. mist. salin. febrif. ut antea.

11th.—Some ptyalism; pain all gone; pulse good; bowels regular.—Haust. amar. cum sennâ, ℥ij. nocte maneque. Cont. mist. salin. febrif.

12th.—Feels very well this morning; motions more natural, and no pain at all.—Cont. haust. amar. cum sennâ.

This medicine was continued till the 18th, when he was perfectly recovered, and returned to his duty.

Remarks.—The inflammation in these cases, if it had not been checked, would have assumed, perhaps, the most formidable character, and would have extended through the coats of the bowels to the peritoneum, producing ulcerations, adhesions, &c., with the worst dysenteric symptoms. The deep-seated, dull pain, and the mucous, glairy, and tenacious secretions from the mucous surface of the intestinal canal, are always indicative of inflammatory action in that tunic, and, when not removed by

purgatives, either produce ulceration of the bowels, or form a thick, viscid coating, which often lines the whole intestinal tube, and occasions various formidable symptoms, according to the peculiar constitution, habit, or temperament of the individual. These cases are taken from the hospital books, where there are many hundred more of a similar description.

CASE CXLII.—*Enteritis quickly removed by Local Depletion.*

ROBERT TRAINER, ætat. 19, admitted March 25th, 1817, in the evening. Complains of great heat and burning pain in the lower part of his belly, and great sickness at stomach; bitter taste in his mouth; tongue white, excited, and rather moist; skin covered with cold perspiration; pulse small, oppressed, and quick.—Apply twenty-four large leeches immediately. Calom. gr. xx.; opii, gr. ij. h. s.

26th.—The heat and pain entirely removed; motions small, of a blue clay colour; tongue healthy; pulse full, soft, and frequent.—Mist. purg. ℥ij. cum sulph. magnes. ℥ss. statim.

Vespere.—Has no pain of any kind; pulse regular; skin cool; bowels regular, and stools natural.—Mist. salin. febrif. every three hours.

27th.—Perfectly well.—Repet. mist. purg. Cont. mist. salin. febrif.

Continued the purgative, &c. till the 29th, when he returned to duty, perfectly well.

CASE CXLIII.—*Inflammation of the Peritoneal Coat of the Bowels, &c.*

MICHAEL SMITH, ætat. 19, a recruit, has been in hospital for some days with venereal sores, and under Mr. De Lisle: was attacked 15th April, about five o'clock, P.M. We saw him at half-past five. He complained of excessive and acute pain over the whole abdomen; feels inclination to faint; the whole abdominal viscera seem affected; pulse sharp, and very frequent, but oppressed; cannot take a deep inspiration, and his breathing is very hurried.—Apply twenty-six leeches over the abdomen; and give calom. gr. xx. h. s.

16th.—Pain entirely removed; tongue clean; pulse frequent and hurried; stools copious and morbid, with vast quantities of viscid mucus, which settle at the bottom of the vessel.—Mist. purg. ℥ij.; sulph. magnes. ℥ss. M.; statim.

Vespere.—Stools crude and feculent, very copious.—Repet. calom. ut antea.

17th.—Motions quite natural, and no pain.—Mist. amar. cum sennâ, ℥ij. nocte maneque.

18th. — Perfectly recovered; but as his venereal sores were not healed, he was ordered back to Mr. De Lisle's ward, where he continued the mixture and other treatment for three weeks, when he was perfectly recovered, and returned to his duty.

CASE CXLIV. — *Enteritis readily yielding to active Local Depletions, &c.*

JOSEPH MARGOWITCH, ætat. 34, an old soldier, admitted 16th April, 1817: has been drinking very hard, and complains of extreme pain at the stomach and umbilicus, extending over the whole abdomen; tongue white and excited; pulse hard and sharp; cannot bear the least pressure on the abdomen; bowels constipated. — Apply thirty leeches immediately over the abdomen and epigastric region. Mist. purg. ℥ij.; sulph. magnes. ℥ss. M. stat. Enema purg.

Vespere. — Has passed a great quantity of hardened fæces; tongue much excited; pulse quick and strong; pain in the umbilicus and the lower abdomen less, but he still complains of severe pain at the scrobiculus cordis, and on each side. — Apply twenty more leeches in the course of the diaphragm. Calom. gr. xx. h. s. s. Mist. salin. febrif. every two hours.

17th. — Pain entirely removed; tongue excited; pulse full and strong; copious motions, of a natural appearance. — Pulv. purg. ʒj. stat. Cont. mist. salin.

Vespere. — Tongue more natural; no pain; motions of an olive colour, with hardened fæces. — Repet. calom. gr. xx. Cont. mist. salin. febrif. ut antea.

18th. — No pain at all; pulse good; tongue excited. — Pulv. purg. ut antea.

Vespere. — Motions natural; tongue clean and healthy. — Haust. amar. cum sennâ, ʒij. nocte manequ; which was continued till the 23d, when he was fit for duty.

Remarks. — These cases require but few remarks. The copious local depletions readily removed the disease, with the assistance of purgative medicines, which were necessary to carry off the morbid secretions and fæcal accumulations which had collected, and probably caused the disease. It will be observed, that the glairy, viscid, mucous stools, which were so copiously discharged, in nearly all these cases, entirely disappeared, and were replaced by natural motions, after the purgative medicines had been persisted in for a sufficient time.

CHAPTER III.

OF THE FUNCTIONAL DISORDERS OF THE LARGE BOWELS, AND OF CERTAIN DISEASES
WHICH THEY OFTEN INDUCE.

WE have already drawn attention to the functions of the large bowels, more particularly the cæcum and colon;* and we have now to consider the pathological states and relations of these parts of the digestive organs, and the means of restoring them to their healthy condition. The functional disorders, which will come before us in the present chapter, are chiefly characterised by a deficient tone or action — by a torpid state of the functions usually performed by the different tissues composing these viscera: and although these disorders often are but little calculated to excite either the attention of the patient or the fears of the practitioner in their early stages, yet they not infrequently lead to serious consequences, and excite dangerous diseases either of the structures in which they are seated, or of more remote organs.

In the present chapter, we shall first turn the attention of the reader to morbid accumulations in the large bowels, and afterwards offer a few observations on some of the most important consequences which are induced, either in an immediate or in a remote manner, by this state of functional disorder.

* See Vol. I. page 36.

SECTION I.

Remarks on Accumulations of Morbid Secretions and Fæcal Matters in the large Bowels.

OWING to the form and connexions of the cæcum and colon, the matters discharged into them from the small intestines, as well as the secretions poured out from their own internal surface, are liable to be retained for a very considerable time. Even in health, a remora of these matters takes place; indeed the conformation and relative position of the cæcum and colon are such as are evidently intended to retain for a short time the various matters discharged into them, in order that the last act of the process of digestion shall be completed, and until their fæcal contents accumulate in sufficient quantity for removal. When, however, the fæcal matters are retained longer than is requisite for this purpose, morbid accumulations and obstructions supervene, occasioning mischief not only to these viscera themselves, but also to all the organs with which they have any relation.

Amongst the more immediate consequences of an inactive or torpid state of the functions of the cæcum and colon, is the retention of the mucous secretions poured out from their follicular glands, and the impediment which the consequent accumulation causes to the functions performed in the mucous tissue of these bowels, and in the follicles themselves. We think that there can be no doubt that the viscid and tenacious mucus which is thus collected obstructs the free discharge of the secretion from the follicular glands eliminating it, and gives rise to accumulations in them, as well as in the ducts leading from them. Hence the mucous follicles frequently become obstructed, distended, and subsequently inflamed and ulcerated.

When, in addition to this accumulation of viscid secretions on the internal coat of the large bowels, the fæcal matters are also retained, a still more energetic cause of mischief is superadded, and disorder becomes more general

and severe. The more fluid portions of the fæces, and of the secretions themselves, are then absorbed into the circulation, and carried either into the general current of blood, or, in the first instance, into that portion which flows into the portal vein, and which circulates through the liver. The consequences of this absorption of matters which are excrementitious and hurtful to the system may be readily inferred; and the effects it is calculated to produce upon the functions of the liver, and indeed upon the system generally, must be evidently injurious.

When the biliary secretion is retained for a longer time than usual in the *primæ viæ*, owing to the functional torpor of the large bowels, a great proportion of this fluid is absorbed and carried into the circulation, inducing the more frequent and slighter forms of *icterus*. We have already stated, that this appearance is not to be viewed in the light of an idiopathic disorder, but merely as a symptom of disease, either existing in the biliary apparatus, or in the *primæ viæ*. When the large bowels are loaded with accumulated secretions and fæcal matters, a jaundiced state of the countenance and skin is a very natural consequence in warm climates, particularly among those in whom the biliary secretion is generally in excess: for the absorption of the more fluid parts of the bile will go on, in the small intestines especially, with a rapidity, great in proportion to the deficient secretion from the large bowels. In those cases the stools will seldom betray a great deficiency of bile, although they may betray it on some occasions; but this appearance is extremely fallacious, as a small quantity of the cystic bile will serve to colour a great many alvine evacuations.

But it is not only the mischievous effects arising from the absorption of excrementitious matters which we have to consider as the legitimate consequences of accumulations formed in the cæcum and colon, but the influences proceeding from these accumulations, in a more direct, and frequently mechanical manner.

When accumulations, either of mucous secretions, or of the fæcal and other materials, or of all these combined, form in the cæcum and large intestines,

the mucous follicles become obstructed, enlarged, and disposed to disease of a serious nature; the mucous tunic is impeded in the performance of its various functions; the muscular coats of the bowels become flaccid, and their irritability diminished; the accumulated materials enter into new combinations, give rise to gaseous productions, and at last degenerate into noxious matters; and thus the cæcum and cells of the colon are enormously distended by these materials, many of which have been collecting from a remote period, and by the flatus evolved from their decay and the new states of combination they are disposed to assume, from the presence of moisture, combined with a high temperature.

The distension which frequently takes place in the colon and cæcum from these causes is often very great, and of itself productive of serious disorder. Nor is this surprising, when we consider the various connexions which the cæcum and colon have with the other abdominal viscera, and the manner in which the functions of these viscera may be even mechanically impeded by great distension of these bowels. When in this unnatural state, the cæcum and sigmoid flexure of the colon press upon the femoral nerves and blood-vessels, the vena cava, and internal iliac veins, producing numbness, cramps, pains in the lower extremities, and even œdema, owing to the impeded return of blood through the veins. The ascending and descending portions of the loaded and distended colon press injuriously upon the kidneys and adjoining vessels, and occasion a dull aching and sense of weight in the loins, with disorder of the urinary secretion. When distension of the right flexure and transverse arch of the colon is present, the functions of the liver, the discharge of bile into the duodenum, and the states of the gall-bladder, the duodenum, and stomach, are very materially interfered with. If the accumulations in the arch and flexures of the colon be carried to their utmost, the healthy conditions of the stomach, duodenum, liver, gall-bladder, and biliary ducts, become very seriously deranged, the descent of the diaphragm is much impeded, and the disorder extended to the functions of the lungs and heart. Owing to this latter effect, together with the mechanical influence of the original cause upon the abdominal circulation, the return of blood from the head is retarded; and, as one of its most remote consequences, congestions on the brain, and effusions of serum from its membranes, supervene.

When accumulations, whether of morbid secretions or of fæcal matters, or of both, thus form in the large bowels, the small intestines also experience, in some degree, a similar state of disorder, and the functions of the stomach and liver are also deranged. The patient generally complains of deficient appetite and impeded digestion, with all the symptoms of dyspepsia, as already treated of; and the processes of chylification and nutrition are imperfectly performed. This latter consequence is one to which the course of morbid phenomena necessarily leads; for the morbid secretions and sordes collected upon the mucous surface of the digestive canal obstruct the discharge of the intestinal juices, and consequently the alimentary matters passing through the bowels in the form of chyme undergo a less perfect change, and are insufficiently animalised. The same accumulation which is thus placed in the way of the exhalent vessels and follicular ducts, is also equally an obstruction to the absorption of the chyle which is formed; and, owing to the quantity of excrementitious matter with which the absorbing surface is loaded, the chyle which is formed and absorbed is either imperfectly concocted, or mixed with some of the more fluid excrementitious materials retained in the bowels, and which, during a more active state of the intestinal functions, would have been carried out of the system. In either case, an unhealthy, or at least an imperfectly prepared, fluid is absorbed; and, whether it passes through the mesenteric glands before it is carried into the general current of the circulation, or is directly conveyed into the blood about to circulate in the portal vein, is calculated to induce a morbid condition of these parts.

We have no doubt that enlargements, and other diseases of the mesenteric glands, often originate in this manner; and it appears to us equally evident, that when such derangements admit of removal or amelioration, these ends can only be accomplished by remedies which act first in carrying off the morbid accumulations which have formed, and afterwards in improving the secretions and the quality of the chyle formed during the digestive processes.

When an unhealthy chyle is formed, and excrementitious matters carried into the circulation, in the manner now pointed out, the process of nutrition is imperfectly performed; the countenance becomes pale, and afterwards sallow;

the body wastes; various symptoms of disorder, some referable to the digestive canal, others to the biliary organs, many to the organs of respiration and circulation, and some to the nervous system, supervene, according to the peculiar constitution and predisposition of the patient, leading the practitioner to dread the existence of organic disease of some one of those organs, but generally disappearing before a well-regulated course of purgative and aperient remedies, or as soon as a copious discharge of the morbid accumulations is procured, and the bowels assume their healthy functions.

But it is not only in causing the absorption of an impure chyle, and of a portion of the recrementitious matters contained in the alimentary canal, that accumulations in the *prima via*, more particularly in the *cæcum* and colon, occasion disease; but the *sordes* and secretions which collect upon the mucous surface and in the cells of the colon, undergoing changes from the temperature in which they are placed, become sources of irritation to the follicular ducts and to the surfaces with which they are in contact. In many instances, the irritation thus occasioned is followed by an increased exhalation from the capillary vessels of the internal membrane, and an augmented discharge of mucus from the follicular glands, which tend to detach the accumulated materials that are the original cause of disorder from the surfaces which they load,—a spontaneous diarrhœa thus supervening, and relieving the patient. In other cases, the irritation produced by the morbid accumulations is not only followed by an increased exhalation and secretion, but also runs into an inflammatory state of the capillaries supplying the mucous surface, frequently terminating in ulceration, and extending to the subjacent coats of the bowel.

Many of the worst cases of dysentery and chronic diarrhœa which are met with in India originate in this manner, as we shall have to shew in the sequel; the morbid matters collected in the *cæcum* and in the cells of the colon inducing an irritative state of inflammatory action of the mucous surface of these parts, with spasmodic constrictions of the muscular tunics, speedily terminating in excoriation and ulceration, if active remedial means be not employed early in the disease.

In many cases, the accumulated secretions and sordes lining the mucous surface of the intestines, especially the large bowels, are the nidus for the generation of intestinal worms; these parasitic animals becoming an additional cause of disorder, and often giving rise to morbid phenomena still more remote from the seat of disease than those most frequently resulting from the original cause of disorder, namely, the accumulations in the bowels themselves. This consequence of allowing the secretions of the bowels to collect upon their internal surface, particularly in the situations already specified, is one of the most frequent which occurs in all climates, particularly in warm or intertropical regions. Amongst the natives of warm countries, the irritation of worms in the *prima via* is a most frequent cause of disease, particularly in conjunction with the morbid accumulations and sordes in and from which they breed. Of this we shall hereafter offer some illustrations and shew the manner in which this disorder may be most readily removed, and prevented from returning after it has been cured.

Many of the diseases, also, which affect the skin, particularly those of a chronic nature, depend upon accumulations in the large intestines, and the absorption of excrementitious materials from the *prima via*, which, in the course of their discharge upon the external surface of the body, irritate and inflame the vessels ramified in the delicate tissue subjacent to the cuticle. That this should be a frequent cause of cutaneous eruptions in intertropical regions cannot be a matter of surprise, especially when we consider the quantity of fluid loaded with excrementitious matters which is constantly discharged from the surface of the body in warm climates. Whatever view may be adopted respecting the origin of these disorders, there can be no doubt,—for it is a subject of general and repeated observation,—that the most successful mode of removing them, and of preventing their return, is by instituting a regular course of laxatives, and by restoring the bowels, more especially the colon, to a healthy state of function.

Amongst other derangements occasioned by an overloaded state of the large bowels, either in a remote or immediate manner, hypochondriacal and melancholic affections require a very particular notice. As these are of great

consequence, both in a pathological and therapeutical point of view, we shall return to this subject, in order to bestow upon it due consideration.

We further believe that accumulations of fæcal matter and morbid secretions in the large intestines, besides occasioning diseases seated in remote parts which either sympathise with the *prima via*, or are associated with it in function, and besides irritating and inflaming the surface upon which they accumulate, actually occasion elongations and displacements of the large bowel itself, which necessarily tend to increase and to perpetuate the disorder occasioning them. This is a pathological condition of great importance, especially as respects its consequences; on that account, therefore, we shall consider it in a specific manner in the sequel; and we shall also devote a particular attention to some other derangements of function which seem most frequently, — in warm climates at least, — to depend upon accumulations of fæcal materials and morbid secretions in the bowels, or to originate in this kind of disorder, although afterwards assuming an independent and specific form of existence.

In respect of the *symptoms indicating a loaded state of the cæcum and colon*, it is necessary that the practitioner should be well informed. We need not acquaint the experienced observer of disease that these symptoms are very various in different cases, and that the disorder of organs remote from the seat of disease will often be the chief cause which we may have of suspecting the nature of the original derangement. In all cases, an accurate examination should be made of the abdomen of the patient, commencing with the seat of the cæcum in the right iliac region, following the direction of the colon between the top of the ilium and right ribs, across the epigastric region, and under both hypochondria to the left side and left iliac fossa. If, in the course of our examination, pain be complained of, chronic inflammation should be suspected, and its existence judged of according to the symptoms present. If there be fulness evidently existing in the course now pointed out, or in the abdomen generally, and particularly if the fulness give a doughy sensation to the hand of the examiner, we may consider that the internal surface of the bowels is lined with sordes and accumulated

secretions. If more or less hardness be perceived about the seat of the cæcum, or in any part of the course of the colon or its sigmoid flexure, then the accumulation of hardened fæces should be dreaded. But even in cases where the most careful examination furnishes no proofs of the existence of morbid matters in the *prima via*, we are not on that account to infer that they do not actually exist. Flatulence, either of the small or large intestines, frequently prevents the examination from being so successful as it would otherwise be; and even although the internal surface of the bowels may be much loaded, yet their calibre may also be so much contracted, or at least so little distended, as to give rise to little or no sensible fulness of the abdominal regions. Besides, it often requires very considerable tact to discover this species of derangement by manual examination—a tact which can be acquired only by experience.

Although, therefore, a very careful examination of these regions should be resorted to on all occasions, and although much important information is generally obtained from it, yet the absence of fulness and hardness, or even a natural state of the abdomen, ought not to convince us that morbid accumulations in the bowels are actually not present. In order, therefore, to satisfy ourselves upon this point, we must inquire after other symptoms, and direct our observation to the phenomena which we are now about to describe, though a few of them only are present in individual cases; some of them characterising one case, and others another, according to the particular habits, constitutions, and temperaments of the patients.

When the large bowels are loaded in warm climates, the tongue is generally furred, particularly in its middle and at its root. The patient complains of a disagreeable bitter taste of the mouth, with clamminess of the tongue and fauces, and fœtor of the breath. The countenance is sallow or pale, and covered with an oily moisture. The skin is dusky, and generally in a moist, clammy state, readily perspiring upon the least exertion, and frequently exhaling a disagreeable fetid perspiration. The appetite, early in this state of functional torpidity of the large intestines, is but little impaired; but the digestion is generally weak and difficult, the stools scanty, infrequent,

hard, or at least formed, and of a dark colour; they afterwards, in some cases, are voided more frequently, but they are still scanty, and sometimes attended with slight tenesmus, and are occasionally scybalous, or consisting of pellets of hardened fæces. The urine is generally high-coloured, and deposits a very copious sediment. The pulse is seldom much affected; it is more frequently languid than the reverse, until the morbid accumulations have given rise either to some degree of irritation of the mucous surface, or to slight constitutional disturbance. Headach, and various nervous symptoms, are also frequently complained of at an early stage.

When the accumulation of fæcal matters and morbid secretions in the colon have been long forming, and are present to a considerable extent, they generally occasion, in addition to the foregoing symptoms, uneasiness, pain, sense of weight, and distension of the abdomen. There are frequently, also, loss of appetite, inactivity, dull pain of the loins resembling lumbago, weakness of the lower extremities, with an aching sensation or shooting pains, a furred state of the tongue, particularly in the morning: sometimes a heavy pain, with tension of the abdomen, is complained of, with drowsiness, pain or weight in the head, and sleepiness or agitated rest. If the accumulations are allowed to remain without sufficient evacuations, or scanty and infrequent motions only, then diarrhœa, or even dysentery, frequently supervenes. The morbid and putrid states of the retained secretions and fæcal matters irritate the mucous surface on which they are retained, and often speedily induce a state of ulceration, with all the symptoms of the worst forms of dysentery.

Although the patient may have daily evacuations from his bowels, accumulations of morbid matters in the large bowels may actually exist to a considerable extent. The practitioner should be on his guard respecting this circumstance, as many are misled by it, and conceive that the apparently healthy state of the stools, and the frequency of their being voided, are sufficient proofs that the bowels are fully unloaded. This, however, is only one proof that such is the case, and often a very fallacious one. The cells and flexures of the colon and the cæcum may contain morbid matters, even of considerable bulk, without impeding the passage of other substances. This

is often demonstrated during the treatment of various diseases, and even by *post mortem* examinations.*

In numerous cases wherein disorder was consequent upon morbid accumulations in the large bowels, we have had occasion to remark, that the patients scarcely ever complained of the torpid state of the alvine functions. Indeed, they have often complained of a more than usual frequency of the calls to stool. This is generally misunderstood, both by the patient and practitioner, for a copious discharge from the bowels; but such is seldom the case: the calls, although sometimes frequent, are followed by a very ineffectual relief, and the more recently formed fæcal matters only escape, whilst older accumulations still remain, producing disorder both of the alvine functions and of the whole economy of the system.

Upon inspecting the stools in these cases, they are generally more or less fluid, or are of a soft consistence, and apparently composed of hardened fæces, broken down amid a dark-coloured fluid. Sometimes they are nearly of a natural colour, but often brown, greenish-brown, or muddy; they are generally offensive. If in this state a gentle aperient be given, the stools are frequently to appearance not much disordered,—a circumstance which often misleads both the physician and the patient, and the disorder is therefore imputed to some other cause. If, instead of a gentle purgative, an active cathartic remedy be exhibited, the patient has frequent irritating calls to stool; the motions are watery, and loaded with a gelatinous mucus; and he often complains of tenesmus;—consequences which, equally with the former, tend to mislead. In these cases, the cause of disorder is frequently overlooked, and the employment of suitable medicines either not persisted in sufficiently long to be productive of advantage, or not at all resorted to.

* Plate XXXI. fig. 1. is a very good illustration of this fact. In the colon, represented by this Plate, the cells were filled with fæces, the middle passage only admitting of the transit of the fæcal matters. The reader is requested to examine carefully this Plate. The bowel from which the drawing was made had its cells filled with scybala, and was contracted around them; those lodged in the cells on one side of the colon opposing the escape of those contained in the cells of the opposite side.

In cases of the description now under consideration, much discrimination is requisite in the choice of the kind of purgative which should be prescribed. If aperients and laxatives only be employed, they are seldom sufficiently powerful to remove the accumulated matters, and frequently they do little more than procure the discharge of the more watery parts of the faecal contents, or the excrementitious materials more recently formed. If active cathartics be prescribed, they often occasion distress, by irritating the mucous surface so far as to excite considerable action of the muscular tunics of the bowels, and to occasion a firmer retention of the accumulated matters in the cells of the colon, so that the more fluid portions of the faeces only are brought away, with the exhaled fluids and the mucous secretion which the irritating effects of the cathartic had very greatly increased.

Even when the most appropriate kinds of purgatives are employed in the removal of morbid accumulations in the large bowels, their operation frequently fails of producing the desired effect until after they have been continued for a considerable time. Often, for several days, the stools betray no morbid appearance beyond being more than usually offensive and somewhat morbid in respect of colour; but a steady employment of them for some time is usually followed by decidedly beneficial effects. The stools become sooner or later more and more copious, and require smaller doses of the medicine to act upon them. As they become more abundant, so their morbid appearances are more decided: they are now frequently almost black, or of a greenish black, or a very dark green, or dark brown colour, extremely offensive, and sometimes containing large lumps of a hard consistence, which, when broken down, are perfectly dry in the centre: sometimes these lumps present a putty-like consistence, and vary in colour from that of this substance to a dark-green, a dark-brown, or even a nearly black hue. In some cases, the motions change from a pale clay-colour and putty-like consistence to a curdly green appearance, mixed with a large quantity of a gelatinous, viscid, and tenacious mucus; and occasionally the latter appearance changes to the former: but most frequently these conditions of the stools are observed in distinct cases, the latter being very generally associated with, and indeed

arising from, in numerous instances, the collection of hardened fæces in the cells of the colon.

Having thus drawn attention to the characteristic phenomena of accumulated fæces and secretions in the cæcum and colon, we next proceed to notice some of the causes on which this disorder seems to depend: and, *first*, it will be requisite to premise a few particulars with respect to the pathological condition of these bowels which lead to such accumulations.

Accumulations, whether of the excrementitious portions of the secretions poured into the digestive canal, or of alimentary matters received into the stomach, are generally the result of a torpid or inactive state of the viscera in which they are collected. This state of torpor is commonly connected with debility of the frame generally, or of the digestive organs and lower bowels more particularly, or with both these conditions. In whatever manner it is related, it is generally characterised by a deficient exhalation from the internal surface of the large bowels, and by a scanty secretion of mucus, that which is secreted being more viscid and tenacious than in health, and often obstructing the follicular ducts. Connected with deficient or even morbid secretions from the mucous surface, the vermicular and peristaltic actions of the muscular tunics of the viscera are likewise impaired, allowing in places considerable dilatations of the calibre of the intestine, and accumulations to supervene, which their contractile energies are afterwards insufficient to remove. Even when no such dilatations exist, the torpid state of the muscular fibres of the bowel occasions a slow progression of the fæcal or excrementitious matters along the different flexures of the colon, and, in many instances and on frequent occasions, a complete remora of them, particularly in the cæcum and above the sigmoid flexure of the colon.

From this it will be inferred, that the causes of accumulations in the large bowels are whatever tends, directly or indirectly, to lower the energy of the digestive functions, or of the whole frame. Thus, sedentary occupations, want of pure air and sufficient exercise, indolence, full living (particularly when conjoined with the former causes), late hours, too great indulgence in

sleep or in bed, and the use of too warm and too soft beds, tend very generally to produce a weak state of the digestive organs, and torpor of the large bowels.

A constipated state of the bowels is generally the first stage of morbid accumulations in the *prima via*; yet such accumulations may also occasionally supervene without the bowels becoming constipated so as to attract the notice of the patient. An inactive state of the alimentary canal is extremely common amongst females, particularly those of a nervous and melancholic temperament, and who lead a soft, indolent mode of life. It is very frequently observed in a slight and less hurtful form in persons of a robust constitution and in high health, more especially during voyages by sea, or when travelling on horseback or in a carriage. In these cases, little or no inconvenience is felt from the confined state of the bowels for a time; yet, if they be long neglected, accumulations of morbid secretions and fæces form in the cæcum and cells of the colon, particularly about its sigmoid flexure, occasioning the consequences already pointed out, namely, either irritation of the mucous surface of these parts, followed by diarrhoea, or inflammatory action, with more or less severe local and constitutional symptoms.

Of all the causes which contribute to the production of the species of disorder now under consideration, there is none more frequently observed, or more direct in its operation, than neglecting to attend to every call to stool which an individual may receive. When the fæces are thus pent up in the rectum and lower portion of the colon, from this neglect, accumulations must necessarily take place, and be carried to a morbid height, from the circumstance of those parts, the contractions of which gave rise to the inclination for stool, having subsided to a state of relaxation, after having been resisted in their natural actions.

In cases where the functions of the stomach and liver are very deficient, and the bile not sufficiently stimulating to the alimentary canal, a torpid condition of the large bowels is a frequent consequence; but even in such instances, the inactivity of the bowels may be looked upon rather as resulting

from the state of debility under which the whole digestive organs labour, than as being altogether the consequence of an imperfect secretion of bile; or of the absence of the properties which this secretion usually possesses in health. During the employment of purgatives in cases of this description, and the persisting in the use of them for a sufficient time, it is almost surprising to observe the quantity of viscid, tenacious mucus which is brought away along with fæcal matters which have evidently been long pent up in the cells of the colon. Sometimes the stools have a gelatinous appearance and consistence, from the quantity of this kind of mucus with which they abound. At other times this substance forms only a part of the stool, the rest consisting of fæcal, offensive matters, and a watery fluid, with broken-down fæces: when such evacuations are observed, the mucus is often very ropy or glairy, particularly tenacious, and always deposited at the bottom of the vessel, owing apparently to its greater specific gravity. In such instances, a stick is required to ascertain its existence, when it may be raised along the sides of the vessel by the point of the stick in one or more tenacious, glairy masses. As respects colour, these mucous evacuations vary very remarkably. Sometimes they are of a deep green, passing into a greenish black: at other times they are of a yellowish green, and of every shade to a bright orange and pale yellow.

When the stools present the above appearances, we have generally considered that the viscid and morbid secretions in the internal surface of the alimentary canal had occluded the mucous ducts, and occasioned an accumulation of mucus in them; and that the continued action of purgatives had succeeded in detaching from the mucous surface the viscid and tenacious sordes with which it was loaded, and in setting free the mucus with which the follicles and follicular ducts were congested. Hence the necessity of continuing the operation of purgatives until this state of the stools disappear, and until the alvine evacuations assume a healthy character. In cases of this description, active purgation is indispensably necessary to the recovery of the patient, and must be persisted in; and large doses of the purgatives prescribed are at first required to produce any effect. It seems as if the quantity of viscid mucus, lining the intestinal canal for a while, protected its

sensible surface from the irritating influence of the medicine prescribed ; but as this substance is removed by the operation of the purgatives, so the bowels are more easily acted upon, and smaller doses of the remedies are found sufficiently active.

We have endeavoured to be thus explicit in the explanation of our views upon this point, which we conceive to be of great importance, both in a pathological and in a therapeutical point of view. In respect of the former, we consider that the accumulation of the secretion giving rise to the state of stools now described, is most influential in originating disease of the mucous surface of the whole alimentary canal, but more particularly of that part of it which lines the cæcum and colon, and in producing disordered function of various more or less remote organs. As to the latter, we have often had occasion to know, that the gelatinous and glairy state of the evacuations has been considered as the result of the irritation of the purgative remedies upon the mucous surface, instead of being viewed as indicating a morbid state of the alimentary canal, which has existed previously to the employment of purgatives, and which purgatives alone will cure ; and thus the use of these remedies has been prematurely relinquished, and even severely reprobated. If the purgatives occasioned the state of the evacuations which we have now described, the continued employment of them must invariably increase the quantity of mucus excreted instead of diminishing it, and augment disorder instead of removing it, — circumstances which seldom or ever occur, especially when purgatives and laxatives are judiciously administered.

Not only has this particular mucous or gelatinous state of the stools been ascribed entirely to the purgatives used, but the greenish hue of the evacuations has also been imputed to the same cause ; namely, to the influence of calomel, when that particular purgative has been prescribed. That calomel actually has the effect of giving a greenish tinge to the alvine evacuations, we will not deny ; but we do contend, from an experience of this remedy as extensive as has ever been enjoyed by any single practitioner, that, when it gives a greenish tinge,—whether of a very dark or of a very light hue, or of any intermediate tint,—to the alvine evacuations, the secretions poured

into the alimentary canal are of a morbid condition, requiring purgatives to carry them out of the system, and mercurial alteratives, or medicines operating in a similar manner, to restore the secretions to a healthy state.

When mercurial preparations, especially calomel, mix with the morbid secretions lining the alimentary canal, and with the biliary and pancreatic juices, and more particularly if the bile have been detained for some time in the gall-bladder, or have otherwise acquired greater consistence, a deeper colour, and more acrid properties, a greenish tint of the evacuations is generally remarked, the deepness and darkness of the colour depending upon the quantity of bile, and the condition of the secretions of the bowels and of the functions of these viscera generally: but this condition is less to be imputed to the particular kind of medicine prescribed, than to the morbid condition of the matters collected in the bowels on which it acts. That such is the case, is proved by the circumstance of the stools assuming a healthy character after this particular purgative has been employed sufficiently long to carry off the morbid secretions and accumulations existing in the *prima via*, and to correct the disordered state of function whence these conditions proceed.

Of the importance of attending to the functions of the bowels, and of removing all morbid secretions and accumulations which may form in them, little more may be added. The advantages of the practice, as far as relates to the most prevalent disorders of temperate climates, have been pointed out, and ably insisted upon, by Dr. Hamilton and Mr. Abernethy. The former writer very justly observes, "that the intestines exhale fluids which have become noxious in consequence of changes which they undergo in the body, and of which the greater proportion of the fæces consist: the intestinal canal, therefore, serves the double purpose of repairing waste, and of preventing decay. In this latter function, which I am solely to consider, the intestines co-operate with the other excretory organs, the skin, the lungs, and the kidneys: all these organs have, in respect of this their common relation to the system, a dependence upon one another; and any of them will compensate, to a certain extent, and for a limited time, the interrupted actions of the

others. Nevertheless, the full activity of all is necessary to the enjoyment of perfect health and the continuance of life. The regularity of the intestinal evacuations is connected, besides, in a particular manner, with the well-being and healthy state of the stomach and intestines themselves. The urine and perspirable matter pass off immediately after being secreted, and do not load the organs which separate them. The unnatural detention of these excretions has indeed a more or less remote, and often a fatal effect upon the general system; but the skin and the kidney remain uninjured. It is otherwise with the intestines. Secluded from that communication with the atmosphere by which the perspirable matter is carried off, and unprovided with an appendage resembling the urinary bladder, connected with the kidneys, they are the reservoirs of fæcal matter as it is poured out, which they retain till the accustomed period of evacuation comes round. Different circumstances are apt to induce irregularity in this evacuation: these, together with the facility with which the larger intestines admit of distension, without uneasiness being excited, give frequent opportunity for a progressive accumulation of fæces, whence arise interrupted actions of the stomach and smaller intestines, and consequent dangerous and fatal ailments."

"If, again," this able writer proceeds to remark, "we consider that the exhalations made into the cavity of the intestines are excrementitious, and will, if retained beyond the usual period, undergo changes, and acquire injurious acrimony; and if, moreover, we advert to the connexion by sympathy which many of the organs of the complicated animal frame have with the stomach and intestines, we cannot but recognise the great influence which these must possess over the comfort, the health, and the life of the individual."

If these considerations, together with those adduced by ourselves, are deserving attention in temperate countries, and amongst persons enjoying the advantages of a climate for which nature intended them, how much more important, and how much more deserving notice, are they in respect of the circumstances in which the European constitution is placed in warm countries? There the secreting functions of the liver and digestive mucous surface are augmented, and the secreted fluids themselves are frequently separated, of

a morbid quality, or have a tendency to assume such a condition soon afterwards, if they be retained even for a short time in the animal frame. As respects the various excrementitious parts of the alimentary substances received into the stomach, and other matters poured into the alimentary canal for the purpose of being evacuated from it at stated periods, we may remark generally, that if the retention of them be even but for a short time, various morbid changes must be induced, owing both to the nature of these matters, and the morbid disposition of the surrounding and containing viscera, resulting from the unnatural circumstances in which the individual is placed, when transported to a climate foreign to his constitution, and often abounding with the causes of disease.

SECTION II.

Of the Treatment of Accumulations of Morbid Matters in the Large Bowels.

THE indications of cure, either when the bowels are loaded with morbid secretions, or other fæcal matters, are sufficiently obvious. The practitioner has merely, in the *first* place, to endeavour to remove them by means of those purgatives which seem the best suited to the particular features of individual cases; and when this end is completely accomplished, he ought, in the *second* place, to lay down such a plan for the observance of the patient as shall prevent the return of this species of disorder.

In attempting to accomplish the first part of the treatment, the majority of practitioners, either deceived by the reports of the patient, or misled by the appearance of the stools procured by the first doses of the purgative medicines employed, generally stop far short of the point to which the use of these remedies should be carried. It is not alone necessary that two or three doses of purgatives, or even of active cathartic medicines, should be admi-

nistered, and then the use of them relinquished; but they should be persisted in so as to ensure a fair chance of success from their operation, and be accompanied with such other remedies and regimen as may promote the views with which they are exhibited, and preserve the strength of the patient from suffering from their action.

In giving purgative remedies, the practitioner within the tropics has generally more than one object to accomplish. The most important of them, perhaps, is to remove the morbid accumulations lodged in the *prima via*, particularly in the cæcum and colon. The next is to increase the secretions proceeding from the mucous follicles, to remove obstructions from the mouths of their ducts, and to augment the discharge from the digestive mucous surface generally. These are the chief objects with which purgatives are exhibited; yet a third may be added, namely, to derive from the seat of irritation elsewhere to the surface upon which the purgative acts: but the full accomplishment of the second object generally fulfils the third.

Purgatives are commonly prescribed according to the views of the physician respecting their mode of operation: thus, calomel is usually adopted when the secretion of bile is deficient; aloes when the large bowels require to be fully emptied; and scammony, gamboge, colocynth, and the cathartic salts, when we wish to procure an increased secretion from the mucous surface of the intestines, and watery motions. The propriety of attending to the particular mode in which purgatives operate their usual effects, is of obvious advantage in practice; and in no class of disorders is it more necessary to attend to such distinctions than in those characterised by morbid accumulations in the large bowels. In these complaints, a very obvious benefit usually results from employing those purgatives which procure a full, bulky, but not frequent evacuation of the bowels: such remedies generally restore strength when it sinks from the presence of fæcal matters, instead of lowering it still farther—a consequence frequently following upon the use of such purgatives as give watery motions merely: the former, even although persisted in for a long period, impart tone to the bowels, and restore their natural

functions; whilst the latter are more apt, when frequently repeated, to exhaust the patient, and to diminish the natural energy of the alimentary canal.

This distinction, which has uniformly been attended to in our practice, is one which every young practitioner should distinctly comprehend before he takes charge of Europeans in warm climates. We do not pretend to recommend it upon our own authority merely. Dr. Hamilton, in his valuable work upon purgative medicines, very distinctly states, with reference to similar states of disorder to those which are now occupying and are about to occupy our attention, that “purging will undoubtedly debilitate the body, by causing a flow of fluids greater than usual into the cavity of the intestinal canal, and probably by hurrying off the chyle, and precluding its passage into the system. It is in this manner useful and advantageous in some diseases. This effect, however, is not required in the diseases which are the subject of the following observations, in which the sole intention is to evacuate the contents of the bowels, which, being out of the course of the circulation, are in a manner already extraneous to the body. Purgative medicines, given under this condition, will not induce debility: on the contrary, in the state of disease of which I treat, the bowels, being excited to expel their contents, their functions are restored, appetite and digestion are improved; and the patient, so far from being weakened, is nourished, supported, and strengthened.”—P. 24.

That such effects should follow upon the judicious employment of purgatives, is to be inferred from *à priori* reasoning; that they actually take place in practice, is now an established truth in medical science. Those morbid secretions which rapidly form upon the internal surface of the large bowels of debilitated subjects in warm climates, generally diminish the powers of life in three ways: *first*, by impeding the function of chylification; *secondly*, by obstructing the passage of chyle into the absorbing vessels; and *thirdly*, by diminishing the vital energy of the surface on which it lodges. Now it must be obvious that the continued use of those purgatives which are most

efficient in detaching those morbid secretions from the surface to which they adhere so prejudicially, and which evacuate them from the system in the most complete and safest manner, must, by removing the obstruction occasioned by them, and by abstracting agents acting injuriously on the vital energy of the parts with which they are in contact, most efficiently promote the return of the natural actions of these viscera, and restore the health of the system.

The able author already quoted very justly remarks, that “constipation and accumulation of fæces demand this stimulus (of purgatives) to restore the healthy state of the intestines, and to promote the expulsion of their indurated contents. In proportion as these objects are accomplished, the stimulus from the same purgative becomes more and more powerful; and so little is the necessity for continuing it or for increasing its dose, that, on the contrary, were not the activity of the purgative diminished, or were it not withdrawn altogether as convalescence advances, we should be in danger of inducing weakness by excess of purging.”

In many cases of long-neglected complaints of the digestive organs, the internal surface of the bowels, particularly of the cæcum and cells of the colon, become so thickly coated with a tenacious and thick secretion, giving rise to disorder of the *prima via*, or of some remote organs, as to require the continued and energetic action of those purgatives more especially which procure full and bulky evacuations, before a healthy condition of the system is restored. It is precisely in cases of this description that full doses of calomel, given at bed-time, operate so beneficially; for this medicine produces its purgative effects, as we have already shewn, by dissolving the tenacious secretions, by promoting the biliary secretion, and by increasing the secretions of the mucous surface generally,—thus preparing the accumulated matters, and the bowels themselves, for the operation of the purgatives which may be subsequently prescribed.

In the description of cases now under consideration, the particular kinds of purgative medicines which should follow the exhibition of the calomel

deserve attention. Such as procure full, but not frequent motions, are preferable to others; and amongst these we prefer, on this, as on numerous other occasions, the compound jalap powder, the bitter aperient mixture, castor oil, the compound decoction of aloes with the addition of some purgative tincture, rhubarb and magnesia, and the compound aloes pill, or the aloes and myrrh pill, according to the circumstances of the case. When, in addition to the mere discharge of the fæcal matters, we wish also to promote the secretions of the intestinal canal, the combination of calomel with the compound extract of colocynth, with the compound aloes pill, or with jalap, may be requisite; or the exhibition of calomel may be followed by the usual draught, consisting of the compound infusion of senna with some neutral aperient salt, or by the bitter aperient mixture with the addition of a requisite quantity of the sulphate of magnesia.

In all cases where the removal of tenacious matters from the bowels is necessary, the practitioner should not hesitate in persisting in his object until the stools assume a healthy character; nor should he be misled by the appearance of healthy motions from the operation of the first doses of purgatives which he has prescribed; for he shall often find that, although the stools are at first apparently natural, yet the continued operation of these medicines will succeed in bringing away morbid matters long pent up in the cæcum and cells of the colon, having a very dark or marbled appearance and putty-like consistence. In such cases, the indication is clear, and the continued action of purgatives obviously requisite. But when the stools contain the glairy, gelatinous, and viscid mucus already referred to, much more doubt is apt to attach itself to the mind of the practitioner; and he is more prone to be diverted from his object by the supposition that the state of the stools is the consequence of the purgatives employed. The source of this appearance of the motions we have already attempted to explain in the foregoing section; and even when it does not proceed from that source, it is to be imputed to the presence of some other cause of irritation in the *prima via* than the purgative prescribed. In cases of this description, although the practitioner ought to be aware of the possibility of the glairy mucus found in the stools being the effect of irritation

from the purgative employed, and should watch the symptoms attending its operation, he must not be diverted from his object, but should employ those medicines which fully evacuate the bowels without occasioning marked irritation of them; for either the mucous glands are loaded and require to be evacuated of the secretions accumulated in them, or the internal surface of the bowels is surcharged with this substance, or some irritating matters are lodged in the cells of the colon inducing a morbid secretion of mucus in these situations; in either of which cases, purgatives are indispensably requisite.

When the motions are of the kind now referred to, injections of those substances which gently excite the large intestines to evacuate fully their contents, while they soothe any morbid irritation which may exist in them, ought to be resorted to from time to time. The judicious and repeated employment of laxative enemata promote the operation of purgatives given by the mouth, soothe the irritated state of the colon, relax irregular contractions of this bowel, and dissolve hardened fæces and tenacious secretions lodged in its cells. Where we have reason to suppose that any one or more of those states exist, this mode of treatment should never be dispensed with, and be repeated or persisted in according to the particular features of individual cases.

In those cases referred to in the foregoing section, where the motions assume a greenish hue or spinage-like appearance after the administration of calomel, we should be assured that, although the mercurial preparation may be partly concerned in the production of this colour, the secretions of the intestinal canal, and even of the liver, are chiefly in fault. It is a most serious error to forego the use of purgatives in such cases with the belief that the state of the stools proceeds from the medicines employed; on the contrary, this appearance indicates the propriety of continuing the purgative plan of cure until the motions become of a natural character. In the majority of cases of this description, the bile is either secreted of a morbid quality, or it has been lodged for a considerable time in the gall-bladder; and the secretions proceeding from the follicles of the bowels are generally also disordered. Such being the case, as may be determined by

the observation of every competent observer, what plan of cure can be adopted to remove this pathological condition excepting a well-regulated course of purgative remedies, and the adoption of those medicines belonging to this class which act by procuring the full evacuation of the contents of the bowels, and which promote and correct the secretions of the liver and of the follicular glands seated in the intestinal canal? It is owing to this mode of operation that calomel and other mild preparations of mercury, given either with a view to their purgative or their alterative operation, are generally found, when judiciously prescribed, so very beneficial in cases such as we are considering, more particularly when either combined or given alternately with the other purgative remedies already mentioned.

When the motions present this greenish, tenacious, and otherwise morbid condition, not only should the operation of purgative medicines, given by the mouth so as to operate gently yet fully, be continued until the bowels assume a more healthy state of function, but the use of enemata should be prescribed, with the views already explained. When it is desirable to evacuate the large bowels fully and quickly, in order that the morbid secretions and fæces may not injure the sensible surface of these viscera by remaining in contact with it, then purgative injections may be also employed. When, on the other hand, the morbid condition of the secretions seem to irritate and inflame this part of the intestinal canal, those injections possessing a soothing and emollient quality ought to be adopted. If there be reason to suppose, either from the presence of tenesmus and griping, the mucous state of the stools, or the appearance of broken-down or hardened fæces, or scybala, that indurated fæces or morbid secretions are lodged in the cells of the colon, then the injections should have an aperient as well as a solvent effect. In cases of this description, the soap injection with or without the addition of castor or olive oil, the decoction of barley with the soda tartarizata, the infusum lini with the carbonate of soda and assafoetida, the decoction of marsh-mallows with olive or castor oil, and the infusion of camomile flowers with the soda tartarizata or the carbonate of soda, and other substances of a similar nature, may be adopted according to the particular circumstances of the case.

The advantages resulting from the use of injections of this mildly aperient and solvent kind are very manifest in practice; for they may be frequently employed without risk of disorder, they soothe pain and irritation when these are complained of, and solicit a gentle yet full operation of the bowels, without occasioning fruitless and debilitating efforts at evacuation. Besides, where indurated faecal collections are formed, and are retained by irregular contractions of portions of the colon or rectum, the mildly aperient injections mentioned above often operate beneficially as an adjuvant of the remedies taken by the mouth, especially in removing these spasmodic contractions, and in allaying the irritation which occasioned them.

When it is considered by the practitioner that the retention of accumulated matters in the large bowels arises from spasmodic contractions of the lower portions of the colon and of the rectum, then the mildest purgatives should be given, and be combined with antispasmodics: of these latter the hyoscyamus, the compound galbanum pill, preparations of ammonia and of camphor æthers, and others of a similar nature, have generally proved beneficial in our practice; and whilst they tended to promote the operation of the purgatives with which they were combined, by removing spasm, they had a very beneficial effect, in debilitated patients especially, by preventing also the sinking sensations which often attend upon the necessary operation of purgative remedies. In cases of this description, the enemata administered should be of a similar description to the aperients prescribed, and should be combined in the same manner. Where much debility is present, the combination of nutritive substances with very gentle aperients and antispasmodics is often beneficial, and should be borne in mind by the practitioner.

In the majority of cases wherein morbid accumulations in the large bowels occur, the weakened state of the whole digestive apparatus generally requires a due portion of care. The patient's strength should be supported by requisite nourishment, in order that the purgative plan may be pursued to its ultimate object,—the removal of morbid secretions and accumulations, and the restoration of the healthy functions of the intestinal canal. In many cases, a light,

nutritious, and moderate diet, is all that is necessary, in order to support the energies of the system: in others, however, a small allowance of wine, or any other beverage to which the habits of the patient have accustomed him, is requisite; and in some cases, it is necessary to combine the aperient or purgative remedies, either after these medicines have been employed for a time, or from the commencement of the treatment, with tonics and stimulants. Thus, we have found the combination of the compound infusions of senna and gentian very remarkably beneficial; also the decoction of bark with the tincture of senna and salts; the compound decoction of aloes combined with the infusion of calumba and the bitter tincture contained in the list of formulæ; and the infusion of calumba with that of senna and tincture of aloes. But the practitioner need not confine himself to any of the above combinations: others of a similar character will generally produce very nearly the same effects.

We have already stated (in Vol. I. p. 593, *et seq.*) the importance of attending to the proper time of exhibiting purgative remedies: we beg to refer our readers to the observations made at that place. We may further remark, with reference to the disorders now under consideration, that the alterative doses of medicine, and purgative or eccoprotic pills, should be given always at bed-time, particularly when doses of calomel, or other preparations of this mineral, are exhibited, and a purgative draught early in the morning. By this arrangement, the rest of the patient will not be disturbed, and two or three evacuations will generally be procured before mid-day; thus allowing the patient to continue those avocations which are requisite, or those employments and amusements which are often beneficially resorted to during slighter ailments: thus, also, the periods at which the usual meals are taken are not interfered with, and the functions of digestion not offended by the presence of medicine and the usual articles of food about the same time. During this plan of treatment, the regimen of the patient should be strictly laid down by the practitioner, with a due reference to what we have already said, both in this and foregoing sections: and the purgatives, varied according to circumstances, and differently combined, ought to be regularly continued until disorder ceases. — (See Vol. I. p. 400, *et seq.*; *et* 593, *et seq.*)

Having fulfilled the *first* indication of cure, the *second* becomes next the object of medical treatment. In respect of this part of the physician's duty, but little need be added. The patient should be directed to attend particularly to the state of his bowels, and to the functions of digestion. Gentle tonics combined with aperients ought to be resorted to whenever the functions of the stomach flag; and the operation of the bowels may be promoted by means of an occasional dose of the blue-pill combined with the aloes and myrrh-pill, taken at bed-time, and followed, in the morning, by three or four spoonsful of the bitter aperient mixture. The diet and regimen of the patient should be regulated according to the principles stated in the first Volume of the Work.

The following cases will further illustrate our views respecting the nature and treatment of diminished function of the large bowels, accompanied with accumulations in them of morbid secretions and other fæcal matters.

CASE CXLV.—*Morbid Accumulations in the Prima Via, occasioning general Disorder.*

COLONEL M—— had been some years at the Cape of Good Hope, and enjoyed tolerably good health on his passage to Madras. He suffered much inconvenience from the want of those comforts in the ship which are essential, and indeed common. It may be presumed, therefore, that these privations and annoyances called into action some lurking disease in the constitution; for he was attacked, immediately on his arrival at Madras, in 1820, with an affection of the bowels, characterised by frequent inclinations, without the power to relieve himself; the motions were sometimes constipated, at other times loose, with a dull, heavy, deep-seated pain in the abdomen; foul tongue; great prostration of strength, and wasting of the flesh. The pulse was good, and the skin natural; spirits very much depressed, though he was naturally a very lively man, and he had no inclination for exertion; he says that for some time past he has felt the sensation of being what is commonly called bilious, and has taken some medicine, but he had never been under any regular treatment. On examining the abdomen, there was no pain on pressure being made on the hypochondriac region or under the ribs, but there was fulness at the epigastrium, and less elasticity over the whole abdomen than in health, particularly at the cæcum, where we observed some degree of tumefaction. The tongue, he says, has been foul for a long time, particularly

on getting up in the morning; and the motions, although natural to appearance, have been irregular. From the fulness and want of elasticity in the abdomen, and particularly the accumulation in the cæcum, the nature of the disease appeared quite clear, and we immediately commenced upon a purgative plan of cure.—R Calom. gr. x.; extract. colocynth, gr. jv.; syrup. q. s. Ft. pilul. h. s. s. Mist purg. ℥jv. mane sumend. These had very little effect, and what passed was not in any degree morbid. The following pills were given:—*i. e.* pilul. aloët. cum calom. et antim. tart. no. 1. three times a day; the calomel repeated at bed-time, and the purging draught in the morning. These acted, but not fully, until they had been continued for eight days, when they began to bring away much morbid matter, viscid and tenacious, of a brown colour. The same treatment was persisted in for six days longer, by which time the medicines began to act more regularly and decidedly. The pills were continued, and the bitter aperient mixture given night and morning. After these had been taken for three days longer, making altogether three weeks, the motions put on a very different appearance: they became viscid and gelatinous, of various colours, pale green, dark green, and of an orange colour, with some heavy, clay-like matter, which sunk to the bottom of the vessel. He had great pain in passing these motions, and particularly before the medicines acted: this induced him to believe that the remedies disagreed with him, and it was with some difficulty that we could persuade him to continue them. They were, however, continued without interruption for a fortnight longer, the patient passing the same kind of matter daily, varying, however, in colour, from jet-black to pale green, and from that to light yellow. The green stools had much the appearance of the scum formed upon stagnant water, and could be raised in the same manner by a stick. The purgatives were changed occasionally to calomel at bed-time and castor-oil in the morning, but the same plan of treatment was regularly persevered in. The quantity of viscid, gelatinous, and tenacious matter that passed away was almost incredible. The symptoms at one time became so extremely distressing as even to occasion faintness whilst at stool; but the quantity of morbid matter which was discharged would have deterred any person who had not witnessed many similar cases from following up the purging plan, and might have been considered as the effect of the medicines. Purgatives, however, were regularly given, with the occasional variation above noticed, for ten more days, when the motions became more natural, though still viscid, and he passed them without pain; his spirits also improved, but he was exceedingly reduced in strength. The following pills were now prescribed, and the mixture continued.—R Pilul. aloët., hydrarg., et ipecac., nocte maneque. Repet. mist. amar. cum sennâ, ℥ij. nocte maneque. Sago, arrow-root, and wine, are allowed.

In six days from the period at which the above were prescribed, the motions became quite natural in appearance and odour; and no more viscid, tenacious matter was discharged. The pills and the bitter aperient mixture were continued every night; his appetite improved; and from this time he recovered, but continued the medicine for another week, when one pill only was given, and the aperient every second or third day. The mineral acids and cold infusion of bark were now prescribed, and in a fortnight he was quite well, and is now in England and in good health.*

Remarks.—If this disease had not been checked, it must ultimately have terminated in dysentery, and perhaps ulceration of the colon. That the morbid matter existed in the bowels was evident; and if we had been misled by the belief that these motions were produced by the medicines, we should, in all probability, have lost our patient. This we know is a common opinion; but if it were a correct one, would not the disease have been increased, in place of healthy motions being restored, by the continued use of purgatives? The state of bowels which characterised this case is a formidable source of disease amongst all classes of the community, especially in the higher orders of society, and more particularly females who lead sedentary lives, live fully, and use little exercise; and we have little doubt that it produces many of those diseases denominated *nervous complaints*; in which purgatives might be, and are supposed to be, weakening. Hysterical affection also may arise from the same cause. The investigation of this subject is well deserving the attention of the profession; and, doubtless, will receive due attention from some of its members. We have often seen the motions for the first week or ten days after the commencement of the purgative course very little altered from the natural appearance, and the patients will frequently say that they have been perfectly regular in their bowels: at all times, however, after a regular and persevering purgative action has been continued for some time, the stools have become black, viscid, gelatinous, or otherwise morbid. So long as these viscid and morbid accumulations come away, purgatives should be continued unin-

* The calomel and purging mixture were given night and morning regularly, with the aperient and deobstruent pills, for thirteen days; after which the calomel was discontinued, and the pills, with the bitter aperient, were continued without intermission for fourteen days longer, when the cause of his sufferings became manifest, and viscid, morbid matter was passed in incredible quantity during sixteen days, when the motions began to assume something like a natural appearance. Thus, purgatives were regularly continued for forty-three days, before the motions assumed a natural and healthy character. At this time we diminished the quantity of the purgative medicines, but kept up the action on his bowels for seven days longer, in all fifty days, when tonics were prescribed; and in sixty-seven days he was quite well, and he has remained so up to the present time.

interruptedly; and it will invariably be found, that so soon as these morbid collections are removed, and the motions become natural, disorder will cease, and the patient recover health. His strength, however, must be kept up while he is undergoing this discipline, and his inclinations should be consulted in every respect. The mind should be kept at rest, and the exercise should be moderate and always agreeable. The cold infusion of bark, with the mineral acids, and, indeed, any of the usual tonics, may be afterwards prescribed, in order to promote convalescence.

CASE CXLVI.—*Accumulations of Morbid Matters in the Bowels, producing Emaciation, with great Constitutional Disturbance.*

CAPTAIN M'L—— (3d Feb. 1823) has been in a declining state of health for many months; has occasionally taken medicines, and continued his duty; but for the last two months he has fallen off so much, that his friends have obliged him to call in medical assistance. His countenance is sallow; tongue foul; is unable to use any exertion without being completely exhausted; and has, indeed, every appearance of a person in the last stage of phthisis, having great oppression in his breast; considerable difficulty in breathing; some cough and mucous expectoration; skin dry and scaly; partial perspirations; uncertain appetite; much thirst, and requires to drink three or four glasses of wine before he can eat; the abdomen is dry, rough, not tense, but full and *doughy*; has no pain on pressure, but he occasionally feels a darting and deep-seated pain; motions tolerably free, sometimes natural, at other times dark and fetid, and occasionally watery; pulse tolerably good; spirits in company high, but evidently from an effort, and at all other times he is very desponding; no pain on pressure over the ribs, but he cannot bear any pressure in the epigastric region; and when the hand is laid flat and pressed over the abdomen, he dislikes it, particularly when pressure is made on the cæcum; his eyes are muddy, and countenance sallow and of rather a dark hue, not at all his natural complexion. From these symptoms, we conceived that the disease was evidently seated in the alimentary canal, and particularly in the large intestines, together with functional derangement of the liver. He was put immediately upon a course of purgatives, varied according to circumstances, but never intermitted for even a single day. Calomel occasionally at night, with castor-oil in the morning; the aloetic pill combined with calomel, three or four times a day; and the mist. purgans were given till the most extraordinary masses of morbid, viscid matter were removed; and these continued to come away in

incredible quantity for more than a month before the motions assumed any thing like a natural appearance. At times, after this matter was put into motion, we were so apprehensive of inflammatory action supervening, as to be obliged to guard against it by the frequent application of leeches and blisters to the abdomen; but, during a period of three months, we never once neglected to procure a free and copious action of the bowels. His strength was supported during this time by sago, arrow-root, wine, &c. &c.; and as the morbid matter was removed, although much weakened by the discipline, his countenance improved, his tongue became clean, his appetite returned, he entirely recovered, and is in perfect health in India. So soon as the motions assumed a natural appearance, we discontinued the more powerful purgatives, and substituted the pilul. aloë. cum myrrh, and pilul. hydr. with the bitter aperient mixture. These were afterwards followed by tonics with the mineral acids.

CASE CXLVII.—*Collections of Morbid Secretions in the Large Bowels, producing serious Disease.*

CAPTAIN F——, Madras army, had been ill very nearly eighteen months, at first with symptoms of dysentery, and latterly with a complication of disorders, partaking of dysenteric, hepatic, and pulmonic affections. He had frequently in that time changed the climate, and as he had been under many medical men, he had had the advantage of a great variety of opinions. He came to Madras, we believe, with the intention of returning to Europe, and placed himself under our charge, as garrison-surgeon. He was extremely exhausted, scarcely able to walk; had evening exacerbations of fever, and a hectic flush on the countenance; skin dry and hot; tongue exceedingly foul; constant inclination to stool, but passed little; motions bloody, watery, viscid, tenacious, glairy, and gelatinous matter, but never free or copious; skin dry, like parchment, and hot; pulse irritable; rather an unnatural appetite, and continued thirst; abdomen full, inelastic, and *doughy*, with considerable fulness and indeed enlargement of the cæcum. After a very minute examination, we were satisfied the cause of this disease was chiefly functional; and all that we felt anxious about was, whether ulceration had actually taken place in the colon, and whether the exhausted state of his constitution would enable him to throw off the disease. He was immediately, however, put on a laxative course of medicine. The lower bowel was frequently cleared out by enemata during the day, and an anodyne enema was given at bed-time. Ten and twenty grains of calomel were prescribed occasionally, with one or two grains of opium, and carried off either by castor-oil or

the infus. sennæ cum sulph. magnes. in the morning. The camphor mixture, saline mixture, tepid baths, &c. &c. were also used. By following this plan for some days, we found, that as the bowels were freely acted upon so his comfort was promoted, and that much less blood and more dark-coloured, viscid matter came away. The same treatment was continued for some days (about six), when he expressed himself better than he had felt for a year before. The motions became infinitely more tenacious, dark-coloured, and fetid; the anodyne enema kept him quiet during the night, and his strength was supported by nourishing diet, &c. As the bloody discharge ceased, and the viscid, accumulated matter increased, we put him on a course of the aloetic and calomel pill, with the bitter aperient mixture every morning, continuing the camphor, &c. &c. during the day, and the tepid bath occasionally in the evening. With this treatment the motions became perfectly green and gelatinous, exactly like the green fat of turtle; and the quantity of this matter that came away for several successive days is inconceivable. He now complained of excessive headach, great heat over his eyes, and dislike to the light. Leeches were applied to the temples, the medicines continued, and the salin. mist. cum vin. antim. prescribed. The leeches relieved the head, but not completely, and they were repeated. He afterwards complained much of tension and fulness over the abdomen, with considerable pain on pressure, and particularly at the cæcum and sigmoid flexure of the colon. Leeches were applied over these parts, and a large blister over the umbilicus. Calom. ℥j., opii, gr. ij. were given at bed-time, and ol. ricini, ℥ij. the following morning, assisted by enemata. These were attended with the happiest effects. A large quantity of thick, viscid, leather-like matter was passed from the bowels, retaining a tubular shape, and this was accompanied with a quantity of dark-green and black, viscid, gelatinous matter, which relieved him exceedingly. The tongue now became much cleaner, and although he was very weak, and unable to move from his bed, yet he was certainly improving, and his appetite becoming less voracious and more natural. Calom. gr. x., opii, gr. j., and the ol. ricini, were continued. More of this gelatinous matter was discharged, with something like fæces, for the first time since he came under our care, five weeks since. He still passed green, viscid matter, but more of a feculent character; the pain had entirely left him, and he now only felt excessive weakness. Every attention was paid to his comfort and diet, and calom. gr. x. were given at bed-time, and the mist. amar. cum sennâ, ℥ij. in the morning. The motions were becoming more natural, though there was still some viscid matter mixed with them; but his spirits were good, the hectic flush left him, and the skin now became moist. R Pilul. aloët. cum myrrh, gr. ij.; pulv. ipecac. gr. jss.; pilul.

hydrarg. gr. j.; q. s. Ft. pilul.; three times a day. R Infus. amar. ℥jss.; infus. sennæ, ℥vj.; tinct. card. ℥ijj.; sulph. mag. ℥j. M. ft. haust. nocte maneque sum.

These medicines were continued for ten days, giving two or three substantial motions daily; and always in the morning they became perfectly natural, and he gained strength. — Repet. pilul. night and morning; repet. haust. every night. Nitrous acid diluted for occasional drink, and the cold infusion of bark three times a day. In a few days after this he was taken out for an airing in a palanquin, which was daily continued afterwards, and he improved rapidly. When he had sufficiently recovered his strength, we recommended a sea-voyage, which he availed himself of. He returned to his duty about four months afterwards in perfect health, has continued so ever since, and is in better health than he had enjoyed for many years before.

There can be no doubt but this disease had been very long forming, and if it had been clearly understood when he first complained, it might have been removed with little inconvenience; but the very obscure symptoms that mark these complaints require the greatest attention. We have not a doubt but most of the diseases that are called *bilious*, *indigestions*, *nervous*, and many of the *obscure*, *internal disorders*, considered as anomalous, arise from this cause—from matters remaining in the colon which should be carried out of the body.

CASE CXLVIII. — *Morbid Accumulations in the Large Bowels, occasioning dangerous Disturbance.*

Saturday, July 26, 1823. — A General Officer, previously in good health, a very full, corpulent man, after exposure to the sun, and a good deal of fatigue, was attacked between four and five o'clock in the afternoon with a cold shivering, succeeded by considerable heat, great oppression, and difficulty of breathing. We saw him about six o'clock; the oppression and difficulty of breathing were excessive, with great tumefaction and fulness both at the stomach and over the whole abdomen; the pulse was oppressed, the skin hot and dry, and he complained of giddiness in his head on the least motion; his bowels had not been relieved fully for two or three days at least; the stomach and large bowels seemed to us inflated, and to have lost their tone; we therefore gave ammonia and water in frequent doses, which caused an amazing discharge of flatus, followed by comparative comfort. The common enemata were given without effect. Terebinthinate injections were then had recourse to, which produced offensive discharges from the bowels. These were procured about

eleven o'clock, P.M. The bitter aperient draught was given, the abdomen became less tumid, and he felt disposed to sleep. About two o'clock he had a very offensive motion, feculent, but not remarkably morbid, with some undigested fruit mixed with it. Calom. gr. x.; extract. colocynth. gr. vj.; ft. pilul. were given. Very shortly after this his bowels became tense, and although there was no pain, there was great restlessness; frictions were applied to the belly, and camphor with ammonia and æther given internally. About four o'clock he began to entertain great doubts of his safety, and in order to give confidence to his mind and his friends also, we requested Dr. Abell, who was at Madras at that time, to meet us in consultation. Our united opinion was, after a close and attentive examination, that there was some obstruction in the bowels from accumulated matters, which should be removed. The following draughts were ordered:—R Infus. sennæ, 3x.; sulph. magnes. 3ij.; mannæ, 3j.; extract. colocynth. gr. v.; ol. menth. pip. miiij.; tinct. sennæ, 3iij. M. ft. haust.; to be taken every three hours. Before these draughts were prepared (about six o'clock, A.M.), he passed another offensive, fluid, and feculent motion, not morbid; pulse 80 and 84, full, soft, and regular; respiration free, but he felt restless and exhausted,—sensations which he could not explain, but which, in our mind, evidently arose from a fulness of the large bowel, and tension, either by flatus or fæcal accumulations; had half an hour's sleep, and took the first draught about eight o'clock.

Nine o'Clock, A.M. — Had a dark-coloured motion, mixed with flaky, vegetable-like matter, and in half an hour he passed another dark, fetid motion, with broken fæces.

Eleven o'Clock. — He repeated the draught, and passed a very large motion, mixed with bile and membranous-like matter, but less offensive; feels the heat and uneasiness in his head diminished; complains of sinking; pulse accelerated. A little chicken-broth was allowed him.

One o'Clock. — Passed a frothy, dark-coloured motion, full of white shreds.

Half-past One o'Clock. — Repeated the draught; and as there is some tension over the abdomen, it was well rubbed with the liniment. sapon. and opium, with aquæ ammon. added. A very large motion was afterwards passed, of extremely morbid, feculent matter, with small white shreds, which appear to be lymph effused from the mucous surface; felt much better after this, and about three o'clock he fancied some mulagatawney, and at four o'clock the draught was repeated, and the abdomen again rubbed with the liniment. An amazing large motion, feculent, offensive, and dark-coloured, was passed, and before ten o'clock he had two or three more motions of the same kind. — Calom., gr. x.; opii, gr. ij. h. s. s.

Four o'Clock, A.M. — Passed a good night; had some sleep, and was not disturbed;

pulse good; belly much less tense. — Pulv. jalap. comp. ʒj.; aquæ menth. pip. ʒij. M. ft. haust. stat. capiend.

Six o'Clock, A.M. — Had a free, healthy, fluid dejection, well marked with bile; pulse and skin good.

Seven o'Clock. — Has had another motion, and has passed a considerable quantity of broken fæces. The abdomen was well rubbed with the liniment, which he says relieves him very much. Tongue excited, evidently from irritation, which seems to have been occasioned by excessive tension of the abdomen, and that tension from flatus and morbid accumulations. The indication, therefore, appears to be, to give strength and tone to the stomach and bowels, and to keep the latter in regular action by warm laxatives: the following prescription we consider calculated to produce this effect: — First, *Tonic Cordial*. Infus. amar., mist. camph. āā ʒjv.; tinct. cardam. ʒj.; aquæ ammon. ʒss. M.; a table-spoonful three times a day. — *Tonic Laxative*. R Infus. gentian. comp. ʒvj.; infus. sennæ comp. ʒiij.; tinct. cardam. comp. ʒjss.; decoct. aloë. comp. ʒvj.; aquæ ammon. ʒj. M.; a wine-glassful night and morning.

Half-past Eight o'Clock. — Has taken a little chicken-broth; pulse 78, regular; skin cool; less heat in his head, but the tongue is still excited.

Half-past Nine o'Clock. — Has just had a copious liquid motion, with broken fæces and bilious matter intermixed; has passed a great deal of flatus, with considerable relief; tension of the abdomen diminished. — Continue friction over the abdomen.

Eleven o'Clock. — Has taken a dose of the cordial mixture, after which he slept for an hour, and passed a dark olive-coloured motion, substantial, feculent, with some dark flakes of viscid matter, and white shreds of lymph; felt much weakened by this evacuation, though he acknowledged he was relieved; pulse and skin as before. — Cont. friction over the abdomen, and at three o'clock P.M. repet. mist. cardiac.

Four o'Clock. — Passed another large, morbid, and feculent evacuation; he is certainly better, though much exhausted; tension of the belly less, but evidently more than there ought to be.

Nine o'Clock, P.M. — Mist. aperiens, a wine-glassful. It is evident that this tension depends upon the distension of the large intestine by flatus, nor can we expect its removal until the tone of the bowels is restored. — Continue the friction during the night, and repeat the aperient draught in the morning. About three o'clock in the morning the medicines began to act, and brought away one small but exceedingly dark-coloured motion, with lumps of hardened fæces and some undigested meat; but

he would not repeat the draught at six o'clock, A.M. His belly is less tense; skin cool; pulse good. Takes a little chicken-broth.

Seven o'Clock.—Passed another motion, dark-coloured, full of white shreddy matter, with a good deal of mucus and a small fish-bone. He says he feels much worse, and more exhausted; but his pulse is good, soft, full, and regular, 66 in a minute; skin natural; much less tension of the abdomen. It is probable, therefore, that he feels exhausted from the collapse which has succeeded so much morbid action and abdominal tension.—Give arrow-root and brandy. Repet. mist. cardiac. ut antea, and apply a shawl round the abdomen, to give support.

Nine o'Clock.—Had another motion, of a green colour, with much viscid mucus, and some white shreddy matter; pulse good.

Twelve o'Clock.—Had a copious motion, of a bright brown colour, with a mass of flaky, bilious matter, no fæces, but accompanied by scalding; urine high-coloured; skin cool and moist; pulse quick, and sharper than before. Has taken some arrow-root.

Half-past One o'Clock.—Has had a small substantial motion, with coloured mucus and fæces; he is greatly better; pulse 74.

Half-past Four o'Clock.—An evacuation nearly natural in consistence and appearance; abdomen flaccid; sensations comfortable.—Pilul. hydrarg. gr. j.; pilul. aloët. cum myrrhâ, gr. ij. Ft. pilul. h. s. s. This was continued every night, with the aperient draught in the morning, (which he did not now object to,) for eight or ten days. Particular attention was paid to his diet, and he rapidly recovered, and enjoyed excellent health while we remained in India.

CASE CXLIX.—*Morbid Accumulations in the large Bowels, with Disease about the descending Colon and Rectum.*

A LADY had been in bad health for many years before she came to India, and after her arrival in a warm climate she became extremely debilitated, and in constant pain and uneasiness; indeed, she had despaired of recovery, and was constantly confined to her room. We were first called to this lady on the evening of the 19th January, 1822, when we found her complaining of extreme pain over the whole abdomen, with constant efforts to relieve her bowels without the power, accompanied with continued sickness without bringing up any thing from her stomach. She had taken some pulv. rhæi in the course of the morning, and shortly before we saw her, she

had had some hot wine and water, to which she imputed her present sickness. Her pulse flagged very much while the pain was upon her; and on examining the motions, we observed that they were of a dark-green colour, not feculent, but gelatinous, and evidently morbid and acrid; pulse good, 90 in a minute; skin cool; tongue furred, and loaded with a brown fur. Warm fomentations were applied, her feet were put into warm water, and the following draught taken:—*R* Elix. paragor. ʒij.; ol. anisi, mʒij.; aquæ ammon. ℥xxv.; spirit. æther. vitriol. ℥xxx.; aquæ puræ, ʒij. *M. ft. haust.* This was again repeated at bed-time, and the warm applications to the stomach continued.

20th.—Passed a very restless night, and was much disturbed; motions frequent, morbid, and acrid, not green, but of different colours, shewing a diseased state of the intestinal canal; tongue brown and dry in the centre; great debility, but the pulse and skin not at all altered. I believe she took some tinct. rhæi in the morning, which had some effect, but by no means copious, and the inclination to stool was very frequent, with severe pain striking through the left hip from the rectum and into the left thigh: this pain was distressing; and on examining very slightly over the situation of the cæcum, she complained of great pain on the slightest pressure being made.—*R* Calom. gr. v.; opii, gr. ss.; syr. q. s. *Ft. pilul. vespere sumend.* *R* Infus. sennæ, ʒjss.; tinct. sennæ, tinct. jalap. āā ʒij. *M. ft. haust.* Half this to be taken early in the morning, and repeated, if necessary, in two hours afterwards.

21st.—The draught was agreeable to her stomach, and operated slightly; the motions were extremely dark-coloured, very green, and acrid, but not sufficiently copious; the remainder of the draught was taken, and she was directed to dilute freely and copiously, to use injections, and to continue fomentations through the day. During this day the motions were copious, free, extremely dark-coloured, acrid, and morbid, producing general soreness over the belly, and excoriation at the rectum: but towards evening she was considerably relieved; her pulse was better; tongue yellow and furred, but moister than it was in the morning. The dilution was recommended to be continued, and the anodyne draught to be taken at bed-time.

22d.—Passed a better night, and is much freer from pain; did not take the anodyne draught; her motions were not so dark-coloured, but they were mixed with a gelatinous, fatty substance, the probable effects of the acrimony of the secretions acting on the intestines; pulse 68, firm, full, and strong; skin natural; tongue cleaner; but still she feels that something requires to be brought away; the pains striking through the rectum and thighs are not so severe; the soreness over the belly continues,

and she thinks the pain is extending higher towards her chest; but we fancy this is merely symptomatic of, perhaps proceeding from, flatus. — Repet. haust. aperiens, antea præscrip.; half immediately, and the remainder in two or three hours.

Seven o'Clock, P. M. — Slight pain over the belly. Apply fomentation. The medicine has had effect; the motions again dark, morbid, and acrid. She took the remainder of her draught; tongue yellow, moist, but loaded; general pains less; pulse 80. States that she has been ill for a very long period, and that she has had most distressing pains darting down the rectum from her back, and extending through the hip to her thighs and legs: it was supposed by some that there was stricture in the rectum, which was disbelieved by others; but whether it was so or not, it is certain that she was always easier when her bowels were free and the fæces fluid. Has been operated upon three times for fistula in ano; the first and second times fruitlessly, the last by Sir Astley Cooper, and successfully; nevertheless, she has always felt considerable uneasiness down the sacrum, and about the anus and os coccygis; the catamenia have generally been regular, except for the last two or three months; does not observe that her urine is diminished in quantity, or is in any way disordered. It has been supposed that the kidneys may have been affected, but she does not think so herself; has no bearing down of the uterus, but feels a great bearing down at the rectum, with a frequent desire to go to stool, but which is fruitless on any attempt being made, at least she passes very little at a time; thinks that her former pains must have been occasioned by fæcal accumulations, as they were precisely of the same character, and that they are now much relieved by the copious operations of her medicines; is always better after copious purging, and does not in any way feel exhausted by it; has generally found relief from calomel; salts disagree and distress her; all sweets become acid, and occasion disorder; says that senna agrees very well, and she thinks the blue-pill with aloes and myrrh has been useful to her. She is quite easy this evening; her tongue, though loaded in the centre, has lost the white, excited appearance it had yesterday; there are signs of the catamenia; she takes a warm bath, and her aperient draught is recommended to be taken in the morning.

23d. — Passed an excellent night, and did not take the draught; still feels general soreness over the belly, but it is considerably less than it was; has taken the draught; her motions are of a dark olive colour, and feculent; pulse 80; tongue cleaner, but still foul; skin natural; less pain at the cæcum; the catamenia are copious. — Pilul. calom. ut antea. Haust. aperiens p. m. s.

24th. — Slept sound and well till two or three o'clock, A.M.; felt some sickness at stomach; thinks it is occasioned by the opium she uses in the enema; perhaps it may be the half grain in the pill. The medicine has had effect; motions morbid, feculent, and dark-coloured, shewing that the laxative is still required; pulse 80; tongue quite clean and healthy; no pain either in the back or abdomen; no straining; catamenia continue. — Repet. enema, ut antea.

Evening. — Motions acrid, very dark-coloured, and feculent; feels sickness at stomach, and general fulness over the abdomen; a black streak in the centre of the tongue; acidity in the stomach excessive. — R Pilul. aloë. cum myrrhâ, gr. ij.; pilul. hydr. gr. j.; syrup. q. s. Ft. pilul. h. s. s. Haust. aperiens, ut antea.

25th. — Passed an indifferent night; much griped, and general uneasiness at stomach; was relieved by a draught of aqua ammon. and spirit. æther. nitros.; motions extremely green, acrid, gelatinous, and copious.

Evening. — Has passed the day in comparative ease, but feels oppressed after eating. — Repet. pilul. ut antea. R Aquæ ammon. ℥xx.; spirit. æther. nitros. ℥xxv.; ol. anisi, mij.; aquæ puræ, ℥ij. M. ft. haust. h. s. s. R Infus. amar. ℥viiij.; infus. sennæ, ℥jv.; tinct. cardam. ℥jss.; sulph. magnes. ℥ss. M. ft. mist.; a claret-glassful the first thing in the morning.

26th. — Passed an excellent night; the medicine operated very gently; motions morbid, dark-coloured, and feculent; feels better, and has continued so during the day; tongue foul and loaded in the morning, but became clean at night; feels less distress after eating than usual; the draught last night relieved the oppression very much. — Cont. haust. ammon. ut antea. Repet. pilul. ut antea. Repet. haust. aperiens cras mane.

27th. — The medicines operate very well, and give no annoyance; motions better; tongue clean. — Cont. pilul. ut antea.

28th. — Did not take the ammonial draught; passed a good night: she did not take the laxative draught this morning, but substituted enemata; found some fulness and oppression in the lower belly, which she did not feel when she took the draught, and which continued giving her considerable uneasiness till the bowel was relieved by two or three injections, after which she was better; the tongue is more loaded than it was yesterday, but altogether she is certainly better and more comfortable; she has not yet ventured upon solid food; she feels a craving at the stomach in the evening, as if in want of something to eat, and last night she took a poached egg; this evening she means to try some bread soaked in warm water, and afterwards in milk and water; she says that she is quite sure there is some

mechanical obstruction at the lower part of the intestine, which prevents the free discharge of fæces; and whenever the bowel becomes loaded, there is a sense of fulness, giving the sensation of a large lump or ball, which obstructs the passage: this we consider owing to a constriction of the rectum, or more likely of the descending colon, occasioning fæcal collections to form above it. Thus, of course, it becomes an object to keep the fæces in a liquid state, to enable them to pass the constriction, and to prevent accumulations from forming.

This indication was followed up without intermission, but occasionally varying the laxatives; the blue-pill with aloes and myrrh, the purging mixture, the bitter aperient mixture, and the decoct. aloë. comp., were thus given according to circumstances, and she progressively recovered, and is at this day in better health than she has enjoyed for the last eight or nine years; but she is obliged to continue the above plan regularly, and now understands it so well that she requires no advice from the profession.

CASE CL.—*Accumulations of Morbid Secretions in the Bowels, occasioning considerable Constitutional Disturbance, with Hæmorrhoidal Affection.*

MISS S——, aged about thirty, has long complained of a costive state of the bowels, morbid condition of the stools, which are generally voided with much pain, and often followed by slight hæmorrhage, and the prolapsus of internal hæmorrhoidal tumours. Has been gradually declining in strength, and losing flesh; tongue loaded; pulse sometimes natural, readily accelerated upon motion, and slower than usual when remaining for some time quiet; mouth clammy and foul in the morning, and breath fetid; complains also of fulness and tenderness in the region of the cæcum and course of the colon, with aching in the back, and occasional pain of the head; catamenia irregular as to the time and quantity. Has been long under medical treatment, and has taken purgative medicines frequently, but with no relief, and often with an aggravation of all the symptoms; countenance paler and more dusky than natural; very little or no appetite.

May 7th, 1824. — The following treatment was adopted, and continued with little intermission for about a fortnight:—R Hydr. cum cretâ, gr. iij.; sodæ subcarbon. exsic. gr. jv.: extract. taraxaci, gr. vj. Ft. pilul. iij. horâ somni quotidie capiendæ. R Supertart. potass., confect. sennæ, āā ʒjss.; syrup. zingib. q. s. Ft. electuarium, cujus capiat cochleare unum minimum primo mane quotidie. R Infus. calumbæ,

infus. sennæ comp. āā 3vj.; potass. tartar. 3j.; vin. ipecac. mxx.; spirit. æther. nit. 3ss. M. ft. haust. omni meridie sumendus.

These remedies generally procured three or four full and feculent evacuations daily, which were at first not materially disordered, but which afterwards assumed a more decidedly morbid character. When the evacuations presented this appearance, a dose of calomel was given at bed-time, instead of the pills, every third night; and the infusion of senna with the soluble tartar and a carminative tincture, early the following morning. Light and nutritious diet was allowed, and the treatment daily persisted in, as above, for a fortnight.

At the end of this period, the blood had disappeared from the stools, but the evacuations were remarkably dark, tenacious, and offensive, with scybalæ, consisting of very hard, perfectly dry, and nearly black, or blackish-green substances. The patient's colour now became clearer, the tongue cleaner, and the appetite and strength began to improve. The general plan of treatment during the succeeding month was continued, without any farther change than varying the particular purgatives employed, and combining them with gently tonic infusions; but free evacuations were daily procured. The stools continued to be more or less morbid and offensive throughout the greater part of this time; and it was not until after nearly three months, during each day of which purgatives or laxatives were taken, that they first assumed a healthy character. At this period, the abdominal fulness and soreness had nearly disappeared; the pulse became more regular, and the general health had improved much. Aperients were now combined with tonics, and the patient was enjoined always to procure two evacuations daily. At the end of five months she had perfectly recovered; and has since continued to enjoy a much better state of health than she had at any time for many years. She had no return of the hæmorrhoidal affection, and regained a healthy habit of body.

We could adduce many cases exactly similar to the above, for which, and the following, we are indebted to a friend; but we prefer availing ourselves of his evidence in behalf of our views.

CASE CLI.—*Accumulations in the large Bowels, producing Leipothymia, and great Constitutional Disturbance, with Hysterical Sensations.*

Miss C—, aged 26, has been complaining of debility and loss of health, without any symptoms characteristic of specific disease: her bowels are generally costive, requiring active cathartics to produce an operation upon them; the abdomen hard and

full, and she cannot bear pressure in the regions of the cæcum and sigmoid flexure of the colon; tongue foul; countenance pale, dusky, and chlorotic; appetite diminished; pulse small and accelerated. Complains of occasional headach, and of great sinking, with faintness, especially soon after rising from bed; catamenia regular, but not very abundant; has occasional borborygmi, with the globus hystericus, and pain in the left side; has seldom been a day without the visits of her apothecary during the last two years.

February 21st, 1825.—The following treatment was directed, and was persisted in without any change for eighteen days:—R Hydrarg. submur. gr. xx.; pilul. aloë. cum myrrhâ, ℥ij.; pulv. ipecacuan. gr. jv.; olei anisi, q. s. M. ft. pilul. xij. Capiat binas omni nocte. R Infus. gentian. comp., infus. sennæ comp. āā ℥ij.; potass. tartar. ℥ij.; tinct. aloë. comp., tinct. cardamom. comp. āā ℥ss. M. capiat cochlearia ij. vel iij. larga primo mane et meridie quotidie.

The above succeeded in procuring three or four very large, feculent, and morbid evacuations daily. The complexion improved, and the fulness and tenderness in the course of the colon entirely disappeared. On the nineteenth day of the treatment, a pill, containing one grain of blue-pill and three of the pilul. aloë. cum myrrhâ, was directed to be taken every night; and three table-spoonsful of the decoct. aloë. compos. an hour before dinner. At the end of a month she was perfectly recovered, and has enjoyed excellent health to the present time.

SECTION III.

Cursory Remarks respecting several Disorders frequently depending upon the Accumulation of Morbid Matters in the Alimentary Canal, particularly in the Cæcum and Colon.

WE have already alluded to the frequent occurrence of serious disorder in the bowels themselves, and in organs sympathising with them, in consequence of accumulations of morbid secretions and fæcal matters in the large bowels; and we now proceed to turn the attention of the reader more particularly to this subject. We shall, *first*, direct notice to a certain occasional effect of

such accumulations upon the position of the colon, and which, when induced, generally perpetuates the disorder whence it proceeded, and superinduces others; and, subsequently, we shall consider those affections which are sympathetically related to the morbid condition of the *prima via*, and which are of frequent occurrence in warm countries.

SUB-SECTION I.

Of Elongation and unnatural Positions of the Colon.

IF the reader will take the trouble to refer to the Plates numbered below,* he will perceive various unnatural positions of the large bowel, some of them perhaps the original course of the viscus—or, in other words, congenital—others evidently the result of functional disorder running into organic change. We conceive it by no means improbable, that accumulations formed in the lower part of the colon, and the restraint which is often, but very improperly, imposed upon the inclination to stool tending farther to increase such accumulations by frequent repetition, induce irregular flexures and displacements of portions of the colon, and even an elongated state of this viscus: and we believe that the supervention of these consequences is favoured by a relaxed state of the mesocolon, the peritoneal covering of the bowel, and more particularly of the longitudinal bands which constitute a peculiar feature in the conformation of this viscus. We often find, in cases of old herniæ, considerable displacement and elongation of the colon, and a stretched appearance of the peritoneum and mesentery, particularly in certain places, and yet the parietes of the bowel will be free from morbid change. We conceive that, owing to the impaction of hard fæcal matters about the sigmoid flexure of the colon, from whatever cause resulting, an analogous condition is apt to supervene,

* See Plates XIV. XV. XXIII. XXIV. XXV. XXVI. XXVII. XXVIII. Fig. 2. XXIX. and XXX. Fig. 1.

and that this part of the bowel, at the place where the obstruction exists, will be carried lower into the iliac region or into the pelvis by the increased action of the parts above; which action frequently repeated, or continued for an unusually long time, necessarily leads to partial displacements, elongation, and unnatural flexures of the bowel.

When unnatural flexures are thus formed, or the natural ones increased to the state nearly approaching to convolutions of the bowel, morbid accumulations are more readily and more frequently produced; and, when once formed, very dangerous diseases of the colon itself and of the neighbouring viscera often supervene. Of these, inflammation of the bowel, accompanied with the usual symptoms of dysentery, is the most frequent; and next to it, according to our observation, inflammation of the small intestines and of the liver.

In many cases, also, the obstruction thus placed in the way of the regular flow of the alimentary and secreted matters along the lower part of the digestive canal, even when it fails of inducing active inflammations, occasions a stagnation of the contents of the small intestines, with various severe dyspeptic symptoms, and congestion and consecutive diseases of the liver, attended in several instances with hypochondriacal symptoms, which may terminate in melancholia and insanity in persons having a predisposition to those affections. That these latter consequences may result from accumulations in the large bowels, has been satisfactorily demonstrated by the histories of numerous cases of this description which have come before us, and by the successful issue of the treatment adopted for their cure.

With respect to the particular treatment which may be adopted in cases where displacement or irregular position of the colon exists, we have but little to advance. It should be admitted, that during the life of the patient we have no symptoms indicating the existence of this condition which may not equally proceed from other kinds of disorder. The treatment, however, which is applicable to this derangement is also appropriate to others seated in the same viscus, which are manifested by similar signs, and characterised

by alvine obstruction: hence the observations made in the foregoing section, respecting the removal of accumulations of morbid matters in the large bowels, are perfectly applicable to the species of derangement now under consideration. When, however, there are great tension and fulness in the abdomen, occasioning general distress, restlessness, and oppression in the chest, with uneasiness in the head, irregularity of the bowels and watery discharges by stool, without any of those symptoms that mark increased arterial action, we may fairly infer the existence of either displacement or constriction of the bowel. Either condition will produce these symptoms; and both equally require the fæcal contents to be kept in a fluid state, to enable them to pass along the canal. Here, however, if the nature of the disorder were cognisable during the life of the patient, the use of purgative or laxative enemata is particularly appropriate: whilst an assiduous attention should also be paid to the preservation of a fluid state of the evacuations and a regularly open state of the bowels, by means of laxatives taken by the mouth, and of emollient and gently aperient injections. Besides the cases already referred to,* wherein displacement and elongation of the colon was remarked, the following may be adduced.

CASE CLII.—*Displacement of the Cæcum and Colon—Coagulated Lymph in the Cavities of the Heart, &c.*

JOSEPH CLAYTON, ætat. 19, Madras European Regiment. July 1819. Has been at Madras three or four days, but did not apply for assistance until this morning. He complains of a troublesome cough and expectoration of matter (by his account); pain in his chest very acute when he coughs; had two blisters over the sternum when with his regiment, but felt very little relief from them; never had any leeches applied, although he has been ill for six months past; pulse particularly small; skin natural; complains of giddiness in his head; tongue moist and rather loaded; attacked last evening with vomiting and purging of green-coloured matter; but had no vomiting this morning; three motions since gun-fire.—Sumat hydr. submur. gr. x. stat.: post horas tres, capiat mist. purg. ʒiij. App. hirud. x. sterno. Calom. gr. xv.; opii, gr. j. h. s. s.

* See Vol. I. Cavanagh's Case, pp. 492—8; Hand's Case, pp. 539—41; Gorman's Case, pp. 484—6, Plate XIV.; and Hoyte's Case, pp. 498—502, Plate XV.

August 1st, 1819. — Pain in his breast relieved by the leeches, but he complains of great pain in his head and intolerance of sight; stools green; no vomiting; pulse small and oppressed; tongue clean. — Pulv. purg. stat. Apply eight leeches to each temple.

Vespere. — Had frequent copious, dark, green-coloured stools from his medicine; head considerably relieved by the leeches; skin cool; tongue foul and excited. — R Hydr. submur. gr. x. h. s. s. Pulv. jalap. comp. ʒj. primo mane.

2d. — Has a bitter, disagreeable taste in his mouth; vomited yesterday, green, watery matter; purged also similar matter; feels general sickness at stomach; no pain or uneasiness in his head; pulse exceedingly quick; feels oppression in his chest and stuffing in his head; has had three large stools this morning. — V. S. ad ʒxvj. Pulse 120 and firm after the bleeding.

Vespere. — Has had frequent copious stools of a dark colour; feels much better since he was bled, with the exception of being rather weak; pulse frequent, but not so firm as at last visit; skin natural; tongue very foul. — R Hydr. submur. gr. x. h. s. s. Repet. haust. purg. mane.

3d. — Pulse more free; tongue loaded and covered with a thick white crust; feels no pain any where, but is exceedingly weak; the oppression in his breast is relieved; head better; has still a nauseous, disagreeable taste in his mouth; feels sickness and constant inclination to vomit; did not retain the mixture he took this morning. — Mist. emetic.

Vespere. — Vomit operated well, brought away a great deal of green bile; tongue clean; sickness and head better; pulse quick and rather hurried. — Wine whey. Calom. gr. xx.; opii, gr. ij. h. s. s. Mist. salin. febrif.

4th. — Has passed a very bad night, and has had continual calls to stool, without being able to relieve himself; pulse this morning weak and small; he has no pain on pressure of his belly, but he is often griped; tongue exceedingly loaded; he vomited the purging mixture this morning; pain at the sigmoid flexure of the colon. — Apply a large blister over his belly, and six leeches to the sigmoid flexure. Enema purg. Mist. salin. febrif. cum ant. tart. gr. jss.

Vespere. — Pulse the same as morning; tongue still loaded; complains of sickness at stomach, perhaps from the mixture; stools green, viscid mucus, with the appearance of some bloody water; pain at the sigmoid flexure removed by the leeches; has taken a little arrow-root and wine. — Enema purg. Calom. gr. xx.; opii, gr. ij. h. s. s. Cont. mist. salin. sine ant. tart.

5th. — Pulse 106, very much oppressed, and hardly to be felt; tongue still very much loaded; skin cool and natural temperature; sickness at stomach very trouble-

some in the morning, and nausea still continues; he cannot take any food; stools small, mucus mixed with blood.—Cont. mist. salin. Mist. purg. $\bar{3}$ j. every half hour till it operates. Enema purg. Arrow-root.

Vespere.—Had frequent copious, dark-green evacuations, and very fetid; nausea much better; tongue continues loaded with a yellow mucus.—Repet. hydr. submur. gr. xx., cum opio, gr. ij. h. s. Sumat mist. purg. $\bar{3}$ ij. primo mane.

6th.—Pulse very small and weak; skin rather cold; feels much exhausted; tongue continues exceedingly foul, and covered with a yellow crust; he again feels excessive sickness at stomach, but no pain; he is griped a good deal; stools very morbid, dark-green colour, and feculent; has taken a dose of the purging mixture.—Enema purg.; a bowl of warm tea.

Vespere.—The sickness at stomach relieved; stools copious, feculent, and of an orange colour; feels better, but the pulse is very weak, and tongue continues foul.—Calom. gr. xx.; opii, gr. j. Cont. mist. Tea.

7th.—Skin cold and moist; very restless, and although he does not complain of pain, yet there is an uneasy anxiety about him that shews great derangement; his tongue continues exceedingly loaded, and covered with a thick, yellow crust; he says there is a sensation of heat about the umbilicus: he is constantly calling for something to eat, although he cannot eat when any thing is brought to him; stools natural in appearance, and feculent.—Capiat mist. emet. stat.

Two o'Clock, P.M.—Vomited a good deal of watery matter after the emetic, but very little appearance of bile mixed with it; has had frequent scanty stools, of a light green colour; evacuations come from him involuntarily, and his seat opens considerably; stools not particularly foetid; very restless; skin cold; pulse not perceptible; tongue moist and loaded; very little thirst; at times quite delirious.—R Mist. camph. $\bar{3}$ jss.; aquæ ammon. \mathfrak{m} xx. M. ft. haust. stat. sumend. Fetus pro ano.

Three o'Clock, P.M.—Seized with syncope, and his surface turned quite livid, which continued so for several minutes.—Repet. haust. ut antea, et fetus.

Eight o'Clock, P.M.—Expired.

Examination after Death.—A considerable degree of vascular action appeared over the whole intestinal canal, particularly in the lower part of the ilium. The cæcum was thrown completely out of its place into the centre of the pelvis, immediately over the pubes, and was very much distended with flatus. The ilium was drawn round into the right iliac region, occupying the place of the cæcum, and entering it on the right side. On laying open the cæcum and caput coli, we found a membranous septum between the cæcum and head of the colon, which, although it did not occasion a

complete obstruction, yet the passage must have been considerably interrupted. The coats of the intestine were covered with very dark spots, but there was no ulceration. From the sigmoid flexure to the extremity of the rectum there was considerable inflammation on the external coat; and on laying open and exposing the internal surface of this part of the bowel, it was found covered with similar spots to those which were observed at the head of the colon: there was no ulceration, but the coats were of a gristly hardness. The small intestines were generally of a healthy state; but in the peritoneal coat there was the appearance of considerable vascular action, though not amounting to inflammation. The external coat of the stomach was not in any way changed; but in the villous coat there was considerable vascularity, and about two or three inches from the cardia there was a spot of a verdigrise-green colour, which appeared more like a stain than sphacelation, the part being of firm consistence. The gall-ducts were open, and we were enabled to pass a probe through them into the gall-bladder, which was loaded with dark-coloured, thick bile. The liver was in general healthy, though there appeared some congestion in the right lobe. The kidneys, spleen, and pancreas, were natural. The mesenteric glands were enlarged. In the lungs there was much congestion in the posterior part, perhaps from gravitation of blood. The heart, externally, appeared natural; but on laying open the left auricle and ventricle, we found both loaded with a mass of coagulable lymph, which was so intimately interwoven in the columnæ carneæ, that it must have deprived the heart of the power of receiving its proper quantity of blood; and this may account for the singular oppression and want of pulse described during the treatment of the case. In the head there were signs of some congestion, and considerable arterial action, but no water.

Remarks.—Having only treated the case at its termination, we cannot state any thing further respecting its earlier stages, than that the pectoral symptoms so long complained of by the patient must have proceeded from inflammation of the internal membrane of the heart, the coagulable lymph having been effused and embedded between the columnæ carneæ. The displacement of the cæcum and colon, and the septum between the former and the latter, must have occasioned considerable obstruction to the passage of the intestinal contents, and caused the constant sickness, &c. of which the patient complained, in the same manner as in hernia. The green matter vomited led to the belief that the sickness was occasioned by acrid bile in the stomach, and hence the emetic was prescribed; and the morbid character of the stools indicated the necessity of employing purgatives. It is a question how long this displacement had existed; it doubtless, however, was of considerable duration,

and probably arose from neglect and irregularity of the bowels during the commencement of disorder: and it is not unreasonable to suppose, that the morbid change observed in the heart was consequent upon the disease in the large bowel.

CASE CLIII.—*Displacement of the Sigmoid Flexure of the Colon, inducing serious structural change.*

ARTHUR SMITH, aged 43, an old soldier, has just (July 1st, 1816) been brought to the hospital. He complains of pain of the bowels, which have been constipated for two or three days. He states that he has been long subject to constipation. Tongue foul; pulse 90.—Habeat ol. ricini, ℥iij. stat.

2d.—Was purged in the night; he feels very little better; complains of great nausea and sickness at stomach; pulse 100.—Habeat haust. emet.

Vespere.—The emetic operated; he still complains of nausea; stools liquid, and of a red, brick-dust colour; great pain of the belly about the pubes.—Calom. gr. xij. h. s. s. Adhibeantur parti abdominis dolenti hirudines xvij.

3d.—The pain of the belly was diminished by the leeches; pulse 98, full, soft; face flushed, and pain of head; skin rather moist, warm; fulness of the epigastrium, which is painful on pressure; tongue white; great thirst; taste bitter; slight nausea; stools feculent, mixed with some blood.—Adhibeantur capitis lateri cuique hirud. viij. Appl. ad scrob. cord. emplastr. lyttæ. Habeat med. Cheltenham water, ℔ss.

Vespere.—The head has been much better since the leeches were applied; the cathartic operated well; face still flushed; skin warm; tongue white and rather dry, particularly at the apex; thirst urgent; no nausea; stools green, variegated; pain of the belly alleviated.—℞ Hydrarg. submur. gr. xij.; pulv. antim. gr. iij.; syrup. simp. q. s. Ft. pilul. stat. sumend. Habeat mist. salin. cyathum secundâ quâque horâ.

4th.—He was very frequently at stool in the night; pulse 112, full; tongue cleaner and moister than it was last night; taste still bitter; constant nausea; stools tenacious, of various colours, mixed with some feculent matter and a great deal of mucus; tenesmus very severe; slight pain about the pubes still continues.—Cont. mist. salin. Adhibeantur imo abdomini hirud. xvj. Habeat med. Cheltenham water, ℔ss.

Vespere.—The leeches drew well; the pain in the lower part of the belly is greatly diminished; pulse quick, full; thirst continues; nausea; stools like small pieces of skin, mixed with tenacious, variegated mucus.—Habeat mist. salin. cyathum singulis horis. Repet. pilul. heri præscripta.

5th.—He passed the night uncomfortably, and was frequently at stool; pulse full,

strong; skin moist; tongue cleaner; stools more feculent; no pain in the head or belly, but he feels a hardness at the lower part of the abdomen. — Habeat med. Cheltenham water, ℥ss. Injiciatur enema purg.

Vespere. — The cathartic operated frequently; pulse still full, strong; skin warm; considerable fulness and tension of the belly; tongue clean; thirst urgent; no nausea; stools crude, more feculent, granulated. — Cont. mist. salin. Repet. enema purg. Habeat pulv. ipecac. comp. gr. xv. Descendat in balneum tepidum.

6th. — He was relieved by the bath, but did not perspire; pulse 120, rather hard; skin hot; belly very hard, tense, full; tongue white, moist; stools consist of bloody water, mixed with fæces; urine of a natural colour; pain of the belly when pressed. — Adhibeantur abdom. hirud. xxjv. Habeat pulv. purg. stat. Injiciatur enema purg. meridie.

Vespere. — He has been frequently at stool; respiration difficult; pulse 132, small, belly greatly swelled; tongue clean; much thirst; abdomen very painful; countenance expressive of great anxiety. — R Hydrarg. submur. ℥j.; opii, gr. ij.; syrup. simp. q. s. Ft. pilul. stat. sumend. Injiciatur enema cum ipecac.

7th. — He could not sleep, but was seldom at stool, and was much easier than usual; breathing frequent; pulse 120, small, and frequent; the belly continues exceedingly tense and full; tongue pretty clean, quite moist; stools watery, of a pale brown colour; no pain of the belly. — Repet. enema cum ipecac. Habeat ol. ricini, ℥j.

Vespere. — A scruple of calomel was administered to him at four o'clock. Pulse small, feeble, quick; countenance pale; skin cold and moist; belly still tense and full; stools like slaked lime and water, with a blue serum floating on the surface; great flatulence. — Repet. enema cum ipecacuanhâ. R Tinct. camph. comp. ℥ss.; æther. sulph. mxx.; aquæ puræ, ℥ij. Ft. haust. quàm primùm sumend. Adhibeantur corporis lateribus ampullæ aquâ tepidâ plenæ. Habeat hydrarg. submur. ℥j. post meridiem horâ decimâ.

Died early the following morning.

Examination, four Hours after Death. — The omentum was loaded with fat, and appeared as if it had been intentionally wrapt round the colon, forming a connexion similar to a sword-knot. The transverse arch of the colon passed over surfaces of the stomach, and was so much inflated, that it completely hid the latter; it also pressed the liver firmly against the diaphragm. The liver was rather paler than usual; but the structure was natural. The gall-bladder projected from under the liver, and was full of a straw-coloured fluid. The stomach appeared in the same position as it usually is in the living body, with the greater curvature upwards, apparently

kept in that position by the pressure from below; it was of a pale colour, but circumstances prevented a minute examination. The small intestines were full of air, and were protruded completely out of their natural situation. The duodenum and jejunum were of a dark-gray colour; and in the ilium the very minute branches of the blood-vessels were perfectly distinct, and beautifully injected. The structure of these intestines seemed to be quite healthy, although much inflamed, and deeply coloured in some places. — (See Plate XXV. Fig. 2.) The intestines being taken out, the colon was found to be firmly attached to the muscles of the loins and pelvis, by adhesions between the peritoneal surfaces; it appeared to be gangrenous near the pelvis, where it usually forms the sigmoid flexure. This part of the bowel, as far as the rectum, was so tortuous as to form a complete duplicature, descending deep into the pelvis; and the part nearest the rectum passed to the right of the cæcum, over this viscus, into the right iliac region. — (See Plate XXV. Fig. 1.) The colon and rectum being laid open, exhibited evident marks of inflammation and ulceration on their internal surface. The coats also communicated a sensation as if they had been somewhat cartilaginous. — (See Plate XXV. Fig. 3.) There were no contractions either in the large or small intestines; the air appeared to have accumulated in consequence of the firm adhesion of the colon to the adjoining parietes of the abdomen, thus preventing, in a great degree, the natural peristaltic motion of itself, and of the other intestinal viscera. The kidneys were embedded in a great quantity of fat; they appeared healthy, and of a natural size. The abdomen contained about two pounds of water. The lungs were of the usual colour, and had formed no unnatural adhesion.

Remarks.—The tension and fulness of the belly in this case was no doubt produced by the obstruction in the colon, occasioned by the displacement of its lower flexure. This displacement must have been of long standing, and probably was occasioned by frequent and neglected costiveness, at first inducing slow, inflammatory action, which subsequently was followed by more active disease; in short, by the morbid changes described above. This case shews, therefore, the necessity of a timely application on the part of the patient for assistance, and also the necessity of medical men attending to complaints of the bowels, however trifling they may at first seem to be.

CASE CLIV.—*Elongation, Displacement, and Morbid Adhesions of the Cæcum and Colon, with Constrictions of the descending and sigmoid Flexures of the Bowel, and Accumulations in its superior Portions, &c.*—(See Plates XXIII. and XXVI.)

EDWARD VALLERY (Nov. 19, 1816) has been ill ten days; complains of purging and tenesmus; has a bitter taste in his mouth; pulse quick and full; tongue greenish-yellow.—Mist. emet. statim. Calom. gr. xij.; pulv. antim. gr. iij. M. ft. pilul. quartâ horâ sumend. Mist. salin. quartis horis.

Evening.—Complains of violent pain in his bowels; tenesmus less; tongue dry and white; pulse quick and full.—Apply 24 leeches to his belly. Repet. mist. salin. ℥j. cum antim. tart. gr. j. Repet. pilul. calom. cum antim. h. s.

20th.—Pain in his bowels much relieved; stools watery, and of a brown colour; pulse quick and full; tongue dry and yellow; has a bitter taste in his mouth, and giddiness.—Apply 10 leeches to his temples, and a blister to his belly.—Repet. pilul. calom. cum antim. et mist. salin.

Evening.—Has no pain in his bowels or giddiness; pulse full and quick; tongue dry and brown; has a bitter taste in his mouth.—Mist. emet. statim. R Pulv. scammon. cum calom. gr. xxx. h. s. s. Repet. mist. salin. ℥j., cum spirit. æther. nitros. ʒss.; vin. antim. ʒss. Enema purg.

21st.—Stools black and watery; tongue foul and dry; pulse quick.—R Pulv. scammon. cum calom. gr. xxxv.; pulv. ipecac. gr. iij. M. ft. pulv. stat. sumend. Repet. mist. salin. et enema purg.

Evening.—Stools black, watery, and copious; tongue brown; pulse weak, 120.—Repet. mist. salin. et enema purg. R Calom. gr. xv.; pulv. antim. gr. jv. M. ft. pilul. h. s. s.

22d.—Stools black and watery; pulse quick and full; tongue dry and brown.—Mist. cathart. R Spirit. æther. nitros. ʒj.; vin. antim. ʒj.; tinct. opii, ʒj. mist. salin. ℥j. M. ft. mist. Enema purg. Sponge his body with vinegar.

Evening.—Pulse small, 120; skin rather moist and hot; tongue brown and moist; one stool, green and watery.—R Calom. gr. xv.; pulv. antim. gr. jv. M. ft. pilul. h. s. s. Enema purg.

23d.—Stools bilious, watery, with mucus; pulse quick and full; delirious; tongue dry.—Apply a blister to his head. Mist. cathart. Repet. mist. salin.

Evening.—Stools copious, watery, and green; tongue dry and brown; pulse 110; has no delirium.—Repet. mist. salin.

24th. — Pulse quick and full; stools watery and green; tongue red and foul; skin cool. — Mist. cathart. every hour. R Spirit. æther. nitros. ʒj.; antim. tart. gr. ij.; mist. camph. ℥j. M. ft. mist. cochlearia duo, quartis horis sumend.

Evening. — Pulse quick; stools green and watery; tongue dry; skin cool, rather moist. — Calom. gr. xv.; pulv. antim. gr. ij. M. ft. pilul. h. s. s. Apply a blister to the nape of his neck. Cont. mist.

25th. — Stools watery, reddish; pulse quick and hard; tongue foul; skin cool and dry. — R Extr. aloës cum colocynth. ʒj.; calom. ʒss.; pulv. antim. gr. xxv. M. ft. pilul. xij. duo secundâ quâque horâ sumend. Repet. mist. camph.

Evening. — Stools green and watery; pulse quick and hard; tongue foul; skin rather moist. — Repet. pilul. ut antea. Mist. camph.

26th. — Stools green mucus; pulse full and quick; tongue foul; skin hot and dry. — Repet. pilul. et mist. camph.; add. antim. tart. gr. j. Mist. cathart.

Evening. — Pulse rather quick and hard; stools watery, green mucus; skin hot and dry. — Calom. gr. xx.; pulv. antim. gr. jv. M. ft. pilul. h. s. s. Repet. mist. camph.; add. æther. ʒj. Enema purg. Apply a blister to his head.

27th. — Stools and pulse the same; skin rather moist. — R Calom. gr. xv.; pulv. antim. gr. jv. M. ft. pilul. stat. sumend. Repet. mist. camph.

Evening. — Stools the same; pulse quick; tongue rather moist. — Repet. mist. camph.

28th. — Pulse quick, rather full; stools watery, yellowish-green; tongue and skin dry. — Pilul. aloët. cum colocynth., et mist. salin.

Evening. — Pulse rather quick and weak; skin hot and dry; stools green, watery. Pulv. ipecac. comp. gr. xvij. h. s. s.

29th. — Pulse quick and hard; skin dry; stools bilious, with mucus. — Pulv. jalap., crem. tart. āā ʒss. M. ft. pulv. stat. sumend. Cont. mist. camph.

Evening. — Stools watery, yellowish-green; pulse quick and full; skin hot, rather moist. — Pulv. ipecac. comp. ʒj.; calom. gr. v. M. ft. pulv. h. s. s.

30th. — Pulse cannot be felt at the wrist; skin dry and hot; had no stool last night; appears much oppressed. R Spirit. ammon. mxx.; tinct. opii, mv.; spirit. æther. nitros. ʒss.; aquæ, ʒj. M. ft. haust.

Died at half-past eleven, A. M.

Examination, four hours after Death. — On opening the abdomen, the liver was found to be perfectly healthy. The ilium was contracted, much thickened in its coats, and externally of the colour exhibited in Plate XXIII. The colon presented a very singular conformation. The cæcum was distended, greatly elongated, and

filled with flatus and fæcal matters. The ascending portion of the colon rose high under the liver, adhered to the concave surface of the right lobe, then made a sharp turn, and descended perpendicularly in the right side of the abdomen, close to the cæcum, as far as the right iliac fossa, where it again made a sharp turn upwards, and ascended perpendicularly and parallel to the descending portion, to which it closely adhered by means of coagulable lymph. Having ascended as high as the edge of the liver, near the fissure between its lobes, in the epigastric region, the colon now crossed the abdomen below the stomach, to which it adhered, then passed deep into the left hypochondrium, where it became greatly constricted and convoluted, adhered to the lumbar parietes, and emerged at the usual situation of the anterior curve of the sigmoid flexure, in its course to the rectum. Thus, after the colon had ascended under the liver, a long loop or duplicature was formed, which hung down on the right side of the abdomen, the contiguous sides of this long duplicature adhering by means of coagulable lymph, which covered parts also of the surface of the bowel forming the transverse arch, which adhered firmly to the stomach, at the parts in contact with it. (See Plate XXIII.) The left flexure, descending portion, and sigmoid flexure, had formed an irregular convolution, were greatly contracted in some parts, of a reddish hue, and as if tied firmly down to the adjoining parts and viscera by means of adhesions, and coagulable lymph thrown out from the red and inflamed surfaces.—(See Plates XXIII. and XXVI.)

The internal surface of the cæcum was vascular and ulcerated in parts. The upper part of the colon was distended with flatus and fæcal matters; its internal surface inflamed and ulcerated. The constricted parts of the colon were intensely inflamed, the internal surface excoriated, and the muscular coat laid bare in parts. The bowel between the much-constricted portions contained some dark and morbid fæcal matters. The other abdominal viscera, and the organs contained in the thorax, presented nothing particular.

Remarks.—This case was treated by one of our assistants at the time, and was first seen by us the day before the death of the patient. The treatment was injudicious, and, according even to the symptoms recorded, quite inappropriate. This man had frequently been complaining of an irregular state of the bowels, although he had not considered himself sufficiently ill to come into hospital. It seems to us, that the irritation induced about the descending part of the colon, from retained fæcal matters, had induced constrictions of the bowel in that situation, occasioning accumulations in the parts above. These accumulations, together with the increased action of the cæcum and upper portion of the colon, probably might have occasioned the

elongation of these viscera (unless the collection of morbid matters was posterior to the elongation); and the retention of these matters induced ulceration, followed by inflammatory action of the peritoneal surface and preternatural adhesions, which states were probably increased by the injudicious treatment employed.

CASE CLV.—*Morbid Duplicatures of the Colon, &c.*—See Plates XXIV. and XXVII.

JAMES WYLLEY, recruit, just arrived, aged 21; admitted 3d July, complaining of pain in his head. Skin cool; tongue moist.—Habeat ol. ricini, ℥ij. quàm primùm.

Vespere.—Stools very copious, feculent, and morbid.—Habeat hydr. submur. gr. xij.

4th.—He is much better in every respect.—Habeat medicamenti, cui nomen Cheltenham water, ℔ss. statim.

Vespere.—Stools green, watery, abounding with white mucus.—Habeat hydrarg. submur. gr. xij.

5th.—Stools more feculent; he is much better.—Habeat aquæ Cheltenhamii, ℔ss. statim.—*Vespere.* He is quite well.

6th.—Discharged and re-admitted.

Vespere.—He has had evacuations of blood, and complains of pain in the abdomen.—Habeat hydrarg. submur. gr. xij.

7th.—Stools crude, greenish; no pain of the abdomen.—R Hydr. submur. gr. v.; pulv. jalap. ʒj. Sit pulvis, quàm primùm, sumendus.

Vespere.—Tongue white and furred; taste bitter; vomiting of a green fluid resembling bile; stools green.—Habeat haust. emet.

8th.—Tongue cleaner; clamminess in the mouth less; stools green, feculent; in the night considerable tenesmus; he vomited well, and felt better afterwards; no pain.—R Hydr. submur. gr. v.; pulv. jalap. ʒj. Sit pulvis quàm primùm sumendus. Enema.

Vespere.—Stools copious, mixed with a little blood; still complains of tenesmus; he is rather easier.—Repet. enema purg. Habeat hydrarg. submur. gr. xij. R Mist. salin. ℔j.; spirit. æther. nitros. ʒij.; aquæ ammon. ʒj. Ft. mist. cujus ʒjss. omni horâ capiat.

9th.—Tongue white, rather dry; the unpleasant clammy taste is gone; tenesmus continues; he feels much lighter and easier.—Habeat aquæ Cheltenhamii, ℔ss.

Vespere.—The salts were rejected immediately; and a scruple of jalap and five grains of calomel were given, which operated well; pulse frequent, and not very full;

tongue white, rather dry; stomach rejects all aliment; abdomen much distended with flatus, which he cannot pass; he feels it stopped both below and when it returns towards the stomach.—R Aquæ ammon. ℥xxx.; spirit. æther. sulph. ℥xxx.; aquæ puræ, ℥ij. Ft. haust. statim sumendus. Descendat in balneum tepidum.

10th.—He found relief from the bath; pulse 96, soft and full; tongue white and dry; great thirst; belly less distended; constant tenesmus; he passed the night very restlessly, being much distressed with the inclination, without the power of emptying his bowels.—R Sodæ sulph. ℥j.; ol. menth. pip. ℥jv.; aquæ puræ, ℔j. Ft. haust. statim sumendus. Injiciatur enema purg. Applicetur ad scrobiculum cordis emplastrum lyttæ.

Vespere.—The salt was rejected, and an ounce of the tincture of rhubarb was given; pulse feeble; skin moist; he feels better in every respect.—R Hydrarg. submur. gr. xjv.; ammon. carbon. gr. iij.; opii, gr. j.; syrup. simp. q. s. Ft. pilul. stat. sumend. Capiat tinct. rhæi, ℥j. post meridiem horâ nonâ.

11th.—Pulse 96, full, strong; skin moist, warm; tongue moister, furred, of a bluish colour; he complains of tension of the abdomen, and of cramp in the limbs.—R Mist. purg. ℥ij.; sodæ sulphat. ℥j.; tinct. sennæ, ℥ss. Ft. haust. stat. sumend. et post horam repetendus, nisi prius soluta fuerit alvus. Repet. enema purg. Cont. mist. salin.

Vespere.—Stools copious, feculent mass, brown colour; pulse 108; skin rather hot; tongue cleaner; he has slept little.—Tepid bath. R Tinct. opii camph. ℥ij.; spirit. æther. nitros. ℥j.; aquæ puræ, ℥ij. Ft. haust. stat. sumend. R Mist. salin. ℔j.; aquæ ammon. ℥ij.; spirit. æther. nitros. ℥iij.; sacch. purificat. ℥iij. Ft. mist. cujus ℥jss. tertiâ quâque horâ capiat.

12th.—Medicine operated; he had some sleep after the bath; he is restless, but feels no pain, and passes much flatus freely; pulse 102, full, and strong; skin warm; slight tension of the abdomen; tongue moist, furred, of a bluish colour; stools bloody, with some fæces floating on the surface; sickness of stomach still continues, but is less distressing.—R Mist. purg. ℥ij.; sodæ sulphat. ℥j.; tinct. sennæ, ℥ss. Ft. haust. stat. sumend. Repet. enema purg. Cont. mist. salin.

Vespere.—He felt, about mid-day, a violent sharp pain at the lower part of the belly, and sixteen leeches were applied, which considerably relieved him; pulse 112; skin warm, but not hot; tongue still furred, of a blue colour; much flatus has been discharged; stools frequent, copious, bloody, and fetid; he seems uneasy; has a sense of fulness in the abdomen, but does not complain of pain.—R Hydrarg. submur. gr. xx.; opii, gr. iij.; confect. rosæ Gall. q. s. Ft. pilul. h. s. s. Descendat in balneum tepidum statim.

13th.—Pulse 104, soft, and full; skin cool; fulness of the abdomen inconsiderable; tongue still foul, coated with a dark-blue crust; he passes flatus freely; feels no sickness of stomach, but vomits every thing he takes.—R Hydrarg. submur. gr. xx; opii, gr. iij.; confect. rosæ Gall. q. s. Ft. pilul. stat. sumend. Injiciatur enema purg. stat. Cont. mist. salin.

Vespere.—He has discharged a sphacelated portion of the intestines, about five inches in length, a perfect tube, exhaling an odour extremely offensive; pulse soft, full, very frequent; skin agreeably cool; he feels a collection of air in the stomach, which he cannot discharge; he has been more comfortable to-day, and has suffered less uneasiness at stool than usual.—R Aquæ ammon., spirit. æther. sulph. āā ʒxx; aquæ menth. pip. ʒij. Ft. haust. stat. sumend. Repet. hydrarg. submur. pilul. heri præscriptæ, post meridiem horâ nonâ. Habeat aquam acidulam succo citrino factam pro potu.

14th.—He had some sleep in the early part of the night; stools voided easily, and consist of dark matter, with clotted blood; pulse frequent; skin cool and moist, exhaling an unpleasant smell; the fulness of the abdomen has subsided, except along the transverse arch of the colon; tongue much cleaner; mouth sore, but no ptyalism; great thirst; the pain in the stomach, which was very distressing last night, is now abated.—Repet. haust. heri vespere præscriptus, add. tinct. opii camph. ʒiij. Repet. etiam hydrarg. submur. pilul. ut antea.

Vespere.—Pulse very frequent; skin is becoming cold, and is covered with a cold sweat; mouth affected by mercury; he complains much of flatulence and soreness over the belly, and appears to be sinking.—Repet. haust. ut antea.

15th.—He could not take the pill or any other medicine last night, but has taken some castor-oil this morning, which has not yet operated; he was very restless during the night, and was much troubled with singultus; skin cold, with a clammy sweat; stools frequent during the night, and mixed with clotted blood. He died about five o'clock, P.M.

Examination.—The liver was larger than usual, but in colour natural. The gall-bladder was of a pale colour, and was almost empty. The omentum, full of blood, was firmly attached to the small intestines down to the pubes, and required to be dissected off. The small intestines had been much inflamed, and, in some places, were of a dark-green colour: the small vessels, particularly those of the ilium, were completely injected: some coagulable lymph was spread over the ilium. The stomach was of a pale colour, and its coats were much inflamed and corrugated, particularly at the cardia. The head of the colon externally seemed greatly inflamed and ulcerated. The colon, after having

ascended in its usual manner, descended into the right hypochondrium, under the liver, in the form of a duplicature, the contiguous surfaces of which adhered, also forming very strong adhesions to the kidneys, liver, gall-bladder, and stomach. Here there must have been a complete obstruction. It then went directly across the stomach *under* the liver, and terminated in the usual manner. Considerable inflammation down the remaining part of the colon was observable externally, and the internal surface of the whole colon was inflamed, ulcerated, sphacelated in parts, and deprived of the mucous coat. (See Plate XXVII. fig. 2.) Inflammation of the external coat of the rectum, with strong peritoneal adhesions to the surrounding parts, could also be traced. The mesocolon was a mass of fat. (See Plate XXIV. and Plate XXVII.)

Remarks.—What was the cause of the blue colour of the tongue? The most urgent and distressing symptom was the obstruction to the flatus; and this, in all probability, was produced by the elongation and displacement of the colon. The irregular course and duplicatures of the colon must have existed in this instance long before the period at which it came under treatment, and must have occasioned accumulations of morbid matters, the irritation of which may readily be conceived as having been the cause of the inflammatory action induced throughout the large bowels, and terminating as described above. The duplicature of the colon, formed in this case, instead of hanging down before the cæcum, as in the case of Vallery, descended under the liver, and adhered to the adjoining parts. The patient was treated by a well-educated young physician, an assistant at the time. Bleeding by leeches over the abdomen ought to have been employed in the early stages of the treatment, and repeated according to the effects following the measure. The symptoms of debility present in the case were more apparent than real, and only the consequence of the extent to which inflammatory action had supervened throughout the large bowels.

CASE CLVI.—*Displacement of the Sigmoid Flexure of the Colon, &c.*

(See Plate XXVIII.)

JOHN KARRAN, aged 26 years, admitted 10th July, 1816. He passes blood, and complains of pain in the belly.—R Hydrarg. submur. gr. v.; pulv. jalap. ʒj. Sit pulvis quàm primùm sumend.

Vespere.—Stools watery; pain of the abdomen still continues.—Adhibeantur abdomini hirudines xvj. Habeat hydrarg. submur. gr. xij.

11th.—Stools frequent and feculent; pulse very tremulous and languid; tongue furred; pain of the abdomen still the same. — *Habeat olei ricini, ℥iij.*

Vespere. — Stools copious and feculent. — *R Aquæ ammoniæ, ℥xl.; tincturæ opii comp. ℥ss.; aquæ puræ, ℥ij. Ft. haustus, statim sumend.*

12th. — Pulse frequent, tremulous; tongue clean; stools scanty and feculent; tenesmus frequent; pain of the belly continues. — *Habeat mist. amar. cum sennâ, ℥ij. Adhibeatur abdomini emplastrum lyttæ.*

Vespere. — The blistered surface has risen well; pulse 98, full and soft; tongue foul and dry; stools feculent; he feels a sharp pain in the lower part of the belly. — *Injiciatur enema purgans. R Mist. salin. ℔j.; spirit. æther. nitros., vini antim. āā ℥ss. Ft. mist. cujus ℥jss. singulis horis sumend.*

13th. — Pulse 90; skin cool; tongue moist, but rather foul; one stool in the night, of a dark-green colour; pains generally abated, but continue at the lower part of the belly. — *Repet. enema purgans. Continuetur mist. salin. ut antea. Foveatur abdomen.*

Vespere. — Pulse good; tongue foul; stools greenish, scybalous; pain of the abdomen less; considerable debility. — *Habeat hydrarg. submur. gr. x. Cont. mist. salin. omisso vino antimonialis.*

14th. — Pulse natural; skin cool; tongue dry and furred; thirst continues; stools copious, greenish, fetid; pain about the pubes; he passed the night restlessly; but he is now easier. — *Habeat mist. amar. cum sennâ, ℥ij. Injiciatur enema purg. Cont. mist. salin. ut heri præscript. Foveatur pubes.*

Vespere. — Stools copious, fetid, tinged with blood; he vomited this morning some greenish mucus; pulse frequent; skin rather hot and dry; tongue moist; he complains much of soreness in the bowels. — *R Hydrarg. submur. gr. viij.; pulv. antim. gr. iij.; opii, gr. j.; syrup. simplicis, q. s. Ft. pilul. horâ somni sumend.*

15th. — Pulse 84, good; tongue foul and rather dry; stools crude, green; no pain about the pubes; feels better this morning. — *Habeat mist. amar. cum sennâ, ℥ij. stat Habeat infus. tamarind. pro potu.*

Vespere. — Pulse quick and small; stools feculent, tinged with blood; he complains of fulness in the belly, but there is no appearance of it on examination. — *Repet. pilul. heri præscript. Injiciatur enema purg.*

16th. — Pulse small and frequent; skin cold and rather clammy, exhaling an unpleasant smell; countenance sunk; tongue dry, furred with yellow mucus; stools feculent, fetid; he does not complain of pain or fulness of the belly. — *R Aquæ ammon. ℥xxx.; tinct. camph. comp. ℥ij.; aquæ puræ, ℥jss. Ft. haust. stat. sumend.*

Vespere.—Pulse 120, small, frequent; skin cold, moist; abdomen tumid; tongue cleaner; stools feculent, scybalous; bowels inflated.—R Mist. amar. cum sennâ, ℥ij.; aquæ ammon. ʒss.; olei menth. piperatæ, ℥iij. Ft. haust. stat. sumend. Fasciâ laneâ involvatur abdomen. Habeat vinum Hispanicum et sago pro diætâ.

17th.—Pulse 102, small, frequent; tongue dark-brown, furred, and dry; no appetite; stools frequent, moderate in quantity, containing some floating fæces, and a very little blood; urine copious; he was very restless during the night, and complains again of pain and fulness in the belly, which is still unapparent; he indicates a considerable degree of despondency.—Injiciatur enema purgans. Habeat olei ricini, ʒj. statim. Meridie, bibat vini Hispanici cyathum. Adhibeatur parti abdominis dolenti emplastrum lyttæ.

Vespere.—Pulse as in the morning, very weak and languid; skin cold, moist; tongue cleaner; stools watery, containing small floating cuticular shreds and fæces, very fetid.—R Hydrarg. submur. gr. xjv.; pulv. antim. gr. iij.; syrup. simplicis, q. s. Ft. pilul. stat. sumend.

18th.—Pulse 126, languid, feeble, tremulous; skin cold, clammy, exhaling a cadaverous smell; countenance Hypocratic; tongue brown, crusted, and dry; stools exceedingly black and fetid; delirium in the night, floccitation, anxiety, singultus.—R Aquæ ammon. ℥xl.; spirit. æther. sulph. ℥xx.; tinct. camph. comp. ʒss.; aquæ puræ, ʒij. Ft. haust. stat. sumend.

Vespere.—Pulse gone; cold sweat; singultus; warm wine with spices only exhibited. He died at half-past one o'clock, A.M.

Examination four hours after Death.—The omentum, of a darker colour than usual, was spread over the whole abdominal viscera. Its veins were filled with blood. The stomach, colon, and small intestines, were much inflated; and the latter appeared of a greenish hue. The omentum being removed, the small intestines appeared of a bluish-green colour. In them no particular appearance of inflammation or disease was observable. The sigmoid flexure of the colon appeared to have assumed an extraordinary and unusual position, doubling and undulating to the right side of the pelvis, where, much thickened and enlarged, it terminated. (See Plate XXVIII.) The head of the colon was much thickened and diseased; and this condition extended throughout its whole course. It exhibited no particular marks of inflammation, except a spot occasionally. Considerable inflammation must have existed at some former period, for strong adhesions were found throughout the whole canal, from the caput cæcum coli to the rectum. This was particularly the case on the left side, where it adhered to the psoas muscle in such a manner that it was with difficulty it

could be separated. An incision was made into its coats, which were found to be deeply ulcerated, covered with large black patches of coagulated matter, and filled with a similar substance in a fluid state. A part of the ilium, the whole of the head, and about six or eight inches of the arch of the colon, being laid open, the latter were found to be in an extraordinary degree thickened and ulcerated. — (See Plate XXVIII. Fig. 3 and 4.) The ilium was perfectly sound. The liver was much paler than usual, particularly on the convex side. The gall-bladder was moderately full of pale-green, watery bile. In the stomach there was no appearance of disease. The heart and lungs were also in a healthy state. This man had been a hard drinker for some time before he came into hospital. He had not been well for some months; but he had continued to do duty till very lately.

CASE CLVII. — *Displacement and Elongation of the Sigmoid Flexure of the Colon, with Accumulations, terminating in Dysentery, &c.*

Monday, July 1st, 1822. — Mr. ——— was landed at seven o'clock in the evening, and brought to our house. He had been seriously ill about ten or twelve days, and had been treated by the surgeon of the ship. On his arrival he was very much exhausted, as well from his previous illness as the fatigue of landing. His pulse was small and quick, about 115 in a minute, with a sharp, jerking beat, indicative of great irritation. He did not complain of any pain whatever in his belly, even on pressure; there was no particular fulness at the præcordia or over the abdomen; his skin, on his first arrival, was rather cold, but in the course of the evening it became very hot and rather dry; his tongue very much loaded; some thirst, though not urgent; considerable heat in his head, with headach; motions scanty, and passed in his bed-clothes, exceedingly offensive, of a very dark colour, and very morbid; occasionally he passes blood, mixed with mucus, but without straining or pain of any kind; he has had a blister over the belly, which is still open. — Apply ten leeches to his temple, and give a common enema immediately. R Mist. salin. febrif. ℥j.; aquæ ammon. ℥xxx.; spirit. æther. nitros. ℥ss. M. ft. mist.; a wine-glassful to be taken every two or three hours. R Calom. gr. x.; opii puri, gr. j.; syrup. q. s. Ft. pilul. h. s. s. After the leeches have been removed, apply a bandage round the head, and let it be kept wet with aq. ammon. acetat.

2d. Five o'clock, A.M. — Passed a very restless night; the injection brought away a considerable quantity of most offensive, morbid, feculent matter, with very little blood, but during the night his dejections were small in quantity, and consisted chiefly

of blood and mucus; he neither complains of pain nor straining; pulse the same precisely; skin of the natural temperature; tongue covered with a dark-brown fur.—
 R Infus. amar. ℥j.; infus. sennæ, ℥ij.; tinct. cardam. ℥iij.; sulph. magnes. ℥ss. M.
 ft. haust. stat. sumend.

Eight o'Clock, A.M.—The draught has operated, and removed a vast mass of morbid, feculent matter, excessively offensive and perfectly black, with small lumps of inspissated green matter, like the green fat of a turtle; there is very little blood in his stools, but when they are mixed with water, they give a bloody tinge to it.—R Enema domest. ℔j. stat.

Nine o'Clock.—The injection has been returned, with very little feculent matter or blood; pulse still 115, sharp, and small; no pain whatever over the belly, but on pressure being made in the right iliac region, there is evidently some uneasiness, though he will not acknowledge any pain; the headach is less severe, and there is not so much heat: I do not think there is the slightest improvement.—Apply eight leeches to the right iliac region. The rectum to be washed out with emollient injections three or four times a day. Cont. mist. salin. and cold applications to the head.

Evening, Five o'Clock, P.M.—Has taken, during the day, a little arrow-root and some veal-broth, though he shews very little disposition to eat; his motions during the day (which have been passed in his bed-clothes) were small in quantity, sometimes pure blood with mucus, and at other times black, morbid fæces; the blood is not of that description which usually attends ulcerated bowels, though the symptoms would lead us to suspect this to be the case; the pulse continues exactly the same, and he does not complain of any pain whatever, either in his belly or side; the leeches have done their duty well, but we do not perceive the slightest change of any kind for the better; tongue still loaded, and rather dry this evening.—Repet. pilul. ut antea, pulv. antim. gr. iij. add. Cont. mist. salin. Barley-water for drink through the night.

3d. *Five o'Clock, A.M.*—Was very much disturbed during the night; motions frequent and very small, mucus tinged with blood.—An anodyne enema of about ℥iij. was given during the night, which was retained, and produced some sleep. His pulse this morning is just as it was yesterday; tongue rather dry, and very black at the root; no pain whatever, even in passing the mucous, bloody stools; has more thirst than usual; passes but little urine; countenance rather sharp, and eye heavy; no headach, and less heat in his head; has taken a cup of tea this morning, which seems to have refreshed him.

Six o'Clock, A.M.—Repet. haust. aperiens, ut antea.

Nine o'Clock.—The draught has operated; the dejections are black, morbid

matter, and so offensive that I am obliged to keep vinegar and camphor constantly burning.

Eleven o'Clock.—Has passed a great deal of this same matter, but very little blood; or rather, whatever blood may have accompanied the stools is not visible; he passes no watery, bloody stools at all, and the absence of these renders the case rather obscure; we have not gained one point upon the disease; the pulse continues at its usual rate, from 115 to 118; the tongue furred and dry; skin not unusually hot; he is very thirsty; after the medicine has done acting on the bowels, (and its action appears to be entirely on the large gut,) the mucous and bloody motions return, but are generally suppressed by the anodyne enema.—R Pilul. hydrarg. gr. ij.; pulv. ipecac. gr. $\frac{1}{4}$; syrup. q. s. Ft. pilul.; one to be taken every four hours. Cont. mist. salin. ut antea.

Evening, Five o'Clock.—The motions during the latter part of the day have been scanty, mucus with florid blood; pulse the same; no kind of improvement, but quite the reverse; he gets weaker, and the mind seems to give way; he says there is no pain any where, but we are sure that he must feel pain about the sigmoid flexure of the colon, as he always yields to any pressure on that part; there is not any fulness or heat over the belly at all.—Apply a large blister over the abdomen. Enema domest. lbj.

Eight o'Clock.—The enema remained some time, but brought away very little; no material change. Repet. pilul. calom. ut antea. Enema anodyn. \mathfrak{z} ij. at nine o'clock.

4th. *Five o'Clock, A.M.*—Was delirious in the night, and very troublesome. We think him much worse this morning, but the pulse still continues as usual; there must be great mischief going forward somewhere; the purging draught has always a good effect in removing morbid matter; he is very fond of tea and barley-water; cannot be persuaded to take veal-broth, but he takes arrow-root three or four times a day, and never rejects it.—Repet. haust. purg. ut antea.

Ten o'Clock, A.M.—The motions this morning are worse than ever, exceedingly black, with a kind of metallic pellicle over them, and very offensive, with small pieces of white shreds, like membranous matter, which, on being examined, proved to be green inspissated bile, covered with lymph: after the operation of the draught, the rectum was washed out as usual with the domestic enema.—Cont. pilul. hydrarg. cum pulv. ipecac.

Evening, Five o'Clock.—Has passed the day better than usual, and has not been so frequently disturbed, but the pulse is not in any degree altered, though he is certainly not gaining ground; we are at a loss what to do with him, but as he continues still to pass morbid and offensive feculent matter, the purgative cannot be discontinued.—Repet.

pilul. calom. ut antea, cum extract. cathart. gr. vj. add. Repet. enema domest. lbj. at eight o'clock, P.M. Repet. enema anodyn. ℥iij. at half-past ten o'clock, P.M.

Five o'Clock, A.M.—Passed two copious, offensive motions this morning, without the draught, more gelatinous than before, but still feculent; no alteration in his pulse; tongue dry: feels quite indifferent to every thing, and is very restless; takes tea and arrow-root, and likes them. — Repet. haust. aperiens.

Nine o'Clock.—The same kind of motions we have already described have been passed, they are very copious and offensive; it is rather singular that no liquid motions have ever been produced by the draught; he is sinking fast, and very little can be expected from medicine. — Repet. enema domest. ut antea. Cont. pilul. hydrarg. cum pulv. ipecac.

Evening, Five o'Clock.—Has slept a good deal during the day, with his eyes half-open; wanders very much in his ideas; seems indifferent to every thing; takes arrow-root, but refuses his pill.—The enema repeated.

6th. Five o'Clock, A.M.—Was very restless during the night, constantly endeavouring to get up from his cot, and restrained with much difficulty; he is still restless, but much weaker, and his countenance is entirely changed; he does not recognise any person; his motions pass off involuntarily, but they are still of the same appearance, morbid, feculent, and offensive. He continued in this state of insensibility, taking arrow-root and barley-water occasionally, till half-past nine o'clock, P.M., when he expired.

We have understood that this young man had been unwell and desponding for a considerable time before he reported himself sick; and there can be no doubt, that when he was so reported, the morbid accumulations, which had most probably been pent up in the colon for a long time, had actually produced ulceration. The absence of pain, which is usual in most cases where the mucous coat of the large intestines is the seat of disease, prevented due attention being paid to this case at a time when it might have been useful. The general derangement of the sensorium, which prevailed during the last few days of his illness, we consider secondary; and although effusion may be found, we do not think it can be considered a primary affection.

Examination after Death.—The contents of the thorax were generally healthy. The liver was much enlarged, of a paler colour than usual, and the gall-bladder full of dark-green viscid bile. The structure of the liver was unimpaired. The peritoneal coat of the cæcum appeared quite natural, and almost transparent: that portion of the intestine was much inflated with gas, but contained nothing else. The head and transverse arch of the colon were covered with a general blush and inflammatory spots

along its course, which became more distinct and better marked at the descending colon and sigmoid flexure. The gut in this part appeared considerably lengthened, forming a curve deep into the left side of the pelvis, where it became very much contracted and thickened. From this contracted part the colon took another turn directly upwards, as high as the lumbar vertebræ, and again descended into the right side of the pelvis under the cæcum, displacing the whole of the small intestines from their usual position. The duodenum and jejunum were perfectly healthy; but, from the commencement of the ilium to its termination in the cæcum, this intestine was contracted to nearly one-fourth of its usual diameter, and in many parts considerable congestion was observed. The colon was removed from the body, and examined separately: it was laid open from the cæcum to the rectum, and exhibited the following appearances:—Although the cæcum externally appeared perfectly sound, its internal coat was much inflamed, and the colon, for nearly twelve inches from its commencement, was in a state of high inflammation, with points of ulceration scattered over the whole surface. Small patches of inflammation were found throughout the whole course of the transverse arch; but, from the sigmoid flexure to the extremity of the rectum, the internal coat was much thickened, and interspersed with deep ulcerations.

Remarks.—The late period at which this case came before us, the absence of pain, and the obscurity of many of the symptoms, were the cause of much doubt in our minds as to its nature. The peculiar, irritable, and jerking pulse shewed the existence of very great mischief; and the dry tongue, viewed in connexion with the state of the pulse, seemed to indicate the existence of disease of the liver, or abscess of its internal structure. The extremely morbid and offensive motions very clearly demonstrated the presence of morbid accumulations in the large bowels, and pointed out their mucous coat as the seat of disease, and as very probably in a state of ulceration; although the bloody, watery, and grumous stools were wanting to confirm the latter part of the opinion respecting the presence of ulceration. That obstructions existed in some parts of the bowels, was believed, and acted upon in the treatment of the case. The nature of the disease, as disclosed by dissection, evinced that functional disorder, attended with accumulations of fæcal matters, must have long existed. The obstacle placed in the way of the fæcal discharges, at the sigmoid flexure of the colon, was obviously the chief cause of disease; the displacement of that part of the bowel probably proceeding from collections of fæcal matters, these latter afterwards producing disease of the mucous surface of the viscus, and many of the symptoms of dysentery. The disorder of the sensorium, during the last period of the patient's life, was merely consequent upon the abdominal disease.

The above cases shew the intimate connexion existing between displacements and elongations of the colon, and accumulations in this bowel. Whether the elongation and displacement be a consequence of collections of fæcal matters being allowed to form in the bowel, or the accumulations supervene to the unnatural position in which the colon is placed, still the consequences, as respects this viscus and the small intestines, are nearly the same. The unnatural duplicatures observed in the preceding cases, the singular convolutions of this bowel recorded in the case of Hand, (detailed in Vol. I. page 539—41,) and of which a Plate is given with the present Volume, (see Plate XXIX.) most satisfactorily shew that obstructions to the passage of the fæcal matters must have been the consequence, whether this particular organic lesion proceeded from accumulations of fæces in the colon or not. That the unnatural duplicatures thus formed in the colon, and displacements of parts of this bowel, generally arise, as we have already contended, from obstructions placed in the way of the fæcal discharges, either at the rectum or sigmoid flexure of the colon, seems to us sufficiently obvious, whether those obstructions be mechanical, as from strictures in the lower part of the bowel, as in the case of Vallery, or from other less apparent causes, unless we admit the agency of fæcal accumulations in the bowels, in the production of the changes in question. That collections of morbid matters in the large bowel frequently form in consequence of a relaxation of the tonicity of its muscular coats, and that they derange its functions, and subsequently its organisation, cannot be doubted; but the disorders of this viscus have hitherto been chiefly considered with reference merely to the condition of its coats, and not with regard to accumulations in its cavity, to changes in its position, and of the situation of its flexures in relation to contiguous viscera: to these latter we have attempted to turn professional attention, by detailing the foregoing cases, as we consider the subject to deserve, and indeed to require, further investigation.

M. Esquirol, in his very important Dissertation on Melancholia, contained in the thirty-second volume of the “*Dictionnaire des Sciences Médicales*,” has stated, that in a great proportion of cases of melancholia terminating fatally, he has observed displacement of the colon, the transverse arch of the bowel

descending in some cases as low down as the hypogastric region ; but whether this displacement was connected with elongation of the viscus or not, does not appear from his remarks. The only case on record with which we are acquainted, excepting those that we have now adduced, in which great displacement and elongation of the colon were remarked, and accurately described, was published by Dr. Wells, in the third volume of "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," and occurred in an officer in the service of the East India Company. In this case, as in some of those we have adduced, there was considerable contraction of the bowel at the sigmoid flexure, with great distension of the upper portions, ulceration of the internal surface of the displaced parts, slight adhesions to the adjoining parts of the external surface of the bowel, and a contracted state of the small intestines.

SUB-SECTION II.

Cursory Remarks on Hypochondriasis, Melancholia, and Mental Alienation, in connexion with Accumulations of Morbid Matters in the Bowels.

WE have already shewn, that accumulations of excrementitial matters form in the large bowels generally in consequence of a low state of the vital energies of these viscera, and that when they thus form, their presence tends most essentially to increase the morbid condition in which they originated, and to augment the debility of the frame generally. We now proceed to shew, that when deficient tone of the alimentary canal is followed by the generation and retention of morbid secretions and fæcal matters in the large bowels, and these by diminution of the vital energies of the frame, that the mental faculties not infrequently become disordered in various grades, from the slighter shades of hypochondriasis, through the advanced stage of melancholia, until complete insanity is established.

But while we endeavour to maintain this proposition, we must not be understood as considering that these affections of the mind directly and invariably originate in this morbid condition of the *prima via*; but that it tends very frequently to induce a state of mental disorder in those who, either from hereditary disposition, or from exposure to causes influencing the state of the circulation in the brain, become liable to mental disease. It seems very probable, that the morbid secretions and excrementitious matters allowed to accumulate in the large bowels depress the powers of life, and lower the energies of the nervous system, at the same time that the irritation these substances produce upon the mucous surface of the bowels excite, in a sympathetic manner, the circulation in the membranes and substance of the brain.

One of the most experienced writers in modern times (M. Esquirol,) in his very important observations on melancholia, contained in the "*Dictionnaire des Sciences Médicales*," and to which we have already referred, has stated that, in one hundred and sixty-eight cases of this disease examined by him after death, he found displacement of the colon in thirty-three, the transverse arch of this bowel generally hanging down into the hypogastric region. Now whether this derangement proceeded from accumulations of fæcal matters in this viscus, or from great relaxation and want of tone of its coats and peritoneal covering, the necessary consequence of this condition must have been, in every case, to have favoured an unnatural retention and collection of fæcal and excrementitious matters in the bowel, and to have generated disease in the mucous surface on which they lodged, inducing sympathetic disorder in various parts of the system, more particularly in the brain itself.

This effect, although not necessarily or generally proceeding from morbid accumulations in the *prima via*, yet in those who are suffering from mental anxieties, who have experienced disappointments, who expose themselves to the direct rays of the sun, and who have an hereditary disposition to mental disorder, will very frequently supervene. And although the practitioner is not to consider morbid accumulations in the large bowels as the only, or even on many occasions, as the chief physical derangement to which he ought to direct his remedial means, he should, nevertheless, pay sufficient

attention to the pathological state now pointed out, more particularly as the indications of cure to which it leads are amongst the most important by which he can guide his practice, and, when decidedly acted upon, perhaps the most successful in its ultimate issue.

The ancients, although bad theorists, were, nevertheless, attentive observers of nature. They have very strongly advocated the necessity of active and continued purgation in mental disorders, more especially in melancholia, and for this purpose employed the most active vegetable cathartics, particularly hellebore, conceiving that purging off black bile would remove the disease, which, in their opinion, depended upon a depraved state of this fluid. But although they were mistaken in respect of the particular source whence this morbid and black secretion proceeded, yet they were by no means wrong as to its existence. In a very great proportion of cases of melancholic alienation of mind, and indeed in other forms of mental disorder, the stools procured by means of active purging are very dark, tenacious, and even of a pitchy blackness, resulting, in our opinion, from the accumulation and admixture of the various secretions, excrementitious matters, and imperfectly digested food, poured into the alimentary canal, and from the changes they have undergone during their retention in that situation.

With this view, we have always made it a point, in the cases of alienation which have come before us, to institute a most active and uninterrupted course of purgative remedies in conjunction with those other means which act directly in restraining the morbid action secondarily induced in the brain. Thus, while we have prescribed for months, without interruption, the use of purgative medicines daily, we have also directed general or local blood-letting, according to the circumstances of the case, when there appeared to be more blood circulating to the head than natural; and we have, in cases characterised by deficient tone of the system and by exhaustion, exhibited tonic and cordial remedies, both with a view of supporting the energies of life, and preventing exhaustion during the full and requisite operation of the purgatives prescribed. In those cases where increased determination of blood to the head is remarked, the continued operation of purgatives acts

beneficially in a twofold manner,—they both remove morbid accumulations from the bowels, and they divert the current of circulation from the brain to the viscera on which they act.

As melancholia and mental alienation frequently occur in Europeans in warm climates, and, as far as our experience has extended, having found morbid accumulations in the bowels one of the characteristics of this class of disorders, and the energetic employment of purgatives always most decidedly successful in the treatment of them, we subjoin the following cases, extracted, *verbatim*, from amongst similar details contained in our hospital reports. In all of them, the employment of purgatives brought away most abundant motions of a very dark, tenacious, and offensive description. In some of those cases, the purgative plan had been continued for many days and even for several weeks before it succeeded in detaching the morbid secretions adhering to the coats of the bowels; but, in every case, disorder began to yield as soon as these were carried off, and the motions to assume a healthy character.

In cases, such as we are now about to detail, the practitioner should not intermit for a single day the exhibition of medicines which tend to evacuate the bowels, and promote the discharge of the morbid, alvine accumulations until he succeed in procuring discharges similar to those above alluded to, and in improving the secretions. Nor should he consider, although the colour of the motions may not appear materially morbid, that they are not in other respects very remarkably deranged. They are often very offensive, of a peculiarly disagreeable odour, and when minutely examined, as they always ought to be, they are observed to be tenacious, like bird-lime, of a putty-like consistence, and streaked with various shades of colour, even when reported to the practitioner as being of a natural appearance. The minute examination of the alvine evacuations is a point of the utmost importance in practice, more especially in the disorders under consideration; and although it is not an agreeable office, is a very necessary one, and will be justly considered as such by those who wish to treat disease successfully. It cannot, therefore, be too strongly impressed upon the mind of the inexperienced practitioner.

CASE CLVIII. — *Great Depression of Spirits, amounting to Melancholia, from Morbid Accumulations in the Bowels, and Torpid Liver.*

LIEUTENANT-COLONEL — has been affected for some years past with dyspeptic symptoms, accompanied with frequent attacks of the gravel. During the continuance of these complaints he was troubled with great depression of spirits, amounting to melancholia, accompanied by flatulence and symptoms resembling hysteria. At these periods, warm carminative and antispasmodic remedies were useful; and, during the intervals, great attention to regimen and the state of his bowels was requisite; and when the deposition of uric acid was perceivable, he took magnesia and aromatics with evident advantage. He was recommended to take a sea-voyage to Madras, where he consulted us, and brought the above account of his case from his medical attendant. He came under our care the 12th of October, 1822; his symptoms were those already described, but we did not think he suffered so much from gravel while under our charge as it appears he did formerly. The symptoms of hypochondriasis, under which Colonel — laboured, appeared to us to depend very much upon an imperfect action of the liver, and consequent morbid accumulations in the large intestine; and with this view he has taken one of the following pills every night at bed-time, and a glass of the bitter aperient mixture every morning, which was occasionally quickened by a little of the sulphas magnesiae. — R Pilul. hydrarg. gr. j.; pilul. aloët. cum myrrhâ, gr. ij.; syrup. q. s. Ft. pilul. R Infus. amar. comp. ℥viij.; infus. sennæ, ℥jv.; tinct. cardam. ℥ij. M. ft. mist. These medicines had an excellent effect on his bowels, and procured him one or two copious and abundant motions daily. The discharge from the bowels was at first extremely morbid, black, tenacious, and offensive, and, so long as they continued in that state, the laxative was pursued without intermission. As the alvine discharges became more natural and healthy, his general health improved, but he suffered occasionally from extremely low spirits and sinking, often followed by general coldness over his whole body; and whenever this took place, the motions were always black, adhesive, and tenacious, like tar, the removal of which from the coats of the intestines appeared to cause this sense of sinking and coldness. As a temporary measure, the camphor mixture with aquæ ammoniæ and spiritus ætheris vitriolici was then used, and with advantage; but he always improved and got better after the black, tar-like motions were removed. About three weeks after he first put himself under our care, we had recourse to the nitro-muriatic solution, and the body was sponged morning and evening with it. He continued this remedy whilst he was under our care with manifest benefit; the functions of the liver became more active, and the bile was

secreted of a more healthy quality; the bowels performed their duty more regularly, though he was obliged occasionally to have recourse both to the pills and nixture, which we still recommended him to continue. Our object, during the treatment of this case, was to remove morbid, viscid, and tenacious accumulations from the large intestine, by keeping up a continued action upon that viscus without exhausting the constitution by stronger purgatives, and to restore a healthy action to the liver, the want of which we consider the primary cause of the functional disorder and accumulations in the large bowels. Colonel — left Madras on the 24th of December, greatly improved in health, but his cure was far from being complete; and although we expected much advantage from a sea-voyage and change of scene, we strongly recommended the continuance of the plan of treatment he was put upon during the time he remained under our care. We afterwards learnt that our recommendation was attended to, and that he soon completely recovered, and is now in perfect health.

CASE CLIX. — *Mental Alienation, with great Timidity, &c.*

Sick Quarters, Garrison Hospital, October 9, 1819.—Admitted, Lieutenant —, of His Majesty's — Regiment. He was ordered hither by the fort adjutant. It was stated that, proceeding by sea to Quilon, he suddenly became deranged. He fancies himself guilty of some great crime, which he cannot explain. He imagines every one he sees to have a design against his life, and he sometimes hides himself under the quilt of the bed, or in the corner of the room; when he speaks, he indicates suspicion, and his eyes are constantly wandering, as if he were fearful of an enemy; pulse soft and full; skin rather hot; face flushed; tongue loaded with a thick yellow crust; bowels generally constipated.—*Adhibeatur emet. stat. R Submur. hydrarg. gr. x.; pulv. antim. gr. iij.; cons. rosæ, q. s. Ft. pilul. h. s. s. Capiat mist. purg. 3jv. cras mane.*

10th.—Vomited a great quantity of matter resembling bile, and the purgatives have operated strongly; says he feels better; speaks very hurriedly, and appears uneasy; complains of a sensation of heat in the head; eyes suffused; pupils contracted.—*Adhibeantur temporibus hirud. xvij. Imponatur nuchæ emplast. lyttæ. Repet. pilul. et mist. purg. Sumat mist. salin. comp. cyathum tertiâ quâque horâ.*

11th.—Feels better this morning; head much easier; dejections most copious, black, and very fetid; still fancies he has secret enemies, laments his misfortunes, &c.; his looks still indicate suspicion, but his answers are tolerably accurate; complains of a buzzing in the head and ears.—*Appl. capiti pannus, acido acetico aquâ multo frigidâ diluto madefactus. Repet. pilul. et mist. purg.*

12th.—Medicines have operated freely ; is nearly in the same state as at last visit.
—Cont. med. omnia.

13th.—Feels much better ; he still indicates a degree of mental imbecility.—
R Massæ pilul. hydrarg. ʒss. ; massæ pilul. aloët. ʒj. ; syrup. simp. q. s. Formentur
in pilul. xx. quarum sumat j. nocte maneque. R Infus. gentian. comp. ʒvj. ; infus.
sennæ, ʒiij. ; tinct. cardamom. comp. ʒj. ; sulph. magnes. ʒj. M. ; sumat cyathum
nocte maneque.

14th to 18th.—Very much improved ; has discharged a great quantity of dark,
morbid matters from his bowels ; mental faculties quite recovered ; he wishes to join
his regiment, but we are, however, of opinion that he ought to be kept quiet, and to
continue the medicines for some days longer.—Cont. pilul. et mist. purg.

24th.—The motions have become more natural and bowels more regular.

27th.—Discharged. To-day he goes to Poonamalee.

CASE CLX.—*Mania, from Morbid Accumulations in the Bowels, and Sympathetic
Irritation, &c.*

Sick Quarters, Garrison Hospital, November 13th, 1819.—Admitted Mrs. —, wife of
Conductor —. She was sent hither by her friends, in a state of mental derangement ;
face flushed ; eyes red, irregular in their motions, and glancing quickly at every object ;
pulse 130 ; skin rather hot ; tongue covered with a thick white crust ; bowels con-
stipated ; she is about five months advanced in pregnancy. She had continued in a
state of mental derangement for some time in her own house, but at last became so
excessively violent that restraint was requisite. We found her in a state of high
excitement, strangely exasperated at every one within her reach, particularly at her
husband, whom she fancied to have meditated the destruction of her and her children.
—R Submur. hydrarg. gr. x. ; pulv. antim. gr. iij. ; syrup. simp. q. s. Ft. pilul. h. s. s.
Sumat mist. purg. ʒiij. cras mane.

14th.—Medicine operated freely ; pulse 108 ; skin natural ; tongue still foul ;
confinement is exceedingly irksome to her ; having destroyed all her clothes, she
wrapt herself in a coverlet, and manifests her usual apprehension of danger.—R Mist.
salin. ʒviij. ; vin. antim. ʒj. ; spirit. æther. nitros. ʒij. ; aquæ ammon. mxx. Ft. haust.
cujus cyathum secundâ quâque horâ capiat.

Vespere.—The medicine produced sickness and nausea, and draughts of warm
water being repeatedly given, she vomited a considerable quantity of greenish matter,
like bile ; skin moist ; mental affection remains unchanged.—Repet. pilul. et mist. purg.

15th.—Slept only for one hour ; medicine has operated ; pulse 110, small ; heat
natural ; tongue still foul ; she complains of a sense of heaviness in the head ; ex-

pression of the countenance wild and variable; sometimes she talks rationally, at other times she expresses herself incoherently; she becomes very violent when her husband approaches her, or when his name is mentioned, and has destroyed all the bed-clothes, dishes, and furniture of her apartment.—*Adhibeantur temporibus hirud. xvj. Appl. nuchæ emplast. lyttæ. Cont. mist. salin. ut antea.*

Vespere.—The blister and leeches have drawn freely; dejections copious and morbid; skin moist; she is much improved; the countenance seems more placid, and she is becoming more reconciled to her husband; her sister and child have been allowed to remain with her.—*Repet. pilul. et mist. purg.*

16th.—Very much improved; pulse 98; tongue cleaner; expression of the countenance still vivid and inconstant, but she speaks rationally, and is reconciled to her relations.—*Cont. mist. salin., olim præscripta.*

Vespere.—She considers herself well, and is anxious to return to her own house.—*Intermittantur med.*

17th.—There is still some appearance of mental excitement, but she has improved wonderfully; it is her anxious wish, as well as the desire of her husband, that she should be permitted to return home. We have acceded to this measure, at the same time cautioning him to be careful, and to report immediately any change that may take place.

19th.—Brought again to the hospital, in a state of great derangement; she is excessively violent, destroys every thing within her reach, and can only be kept under restraint by our presence; she has not slept since she left the quarters; her suspicions have now extended to her sister, as well as to her husband; her apprehension of being destroyed is excessive; the expression of countenance is wild and furious; face flushed; pulse frequent; she refuses medicines, and will not take any food.—*Coerceatur tunicâ arctâ.*—20th. No alteration; is constantly walking.

21st.—Slept a little towards morning; appears considerably exhausted; pulse feeble; eyes red; pupils contracted; complains of heaviness in the forehead; dejections scanty; her apprehension of danger continues.—*Adhibeatur enema purg. Mittatur venâ brachii sectâ sanguis ad ℥xvj.*

Vespere.—Dejections fetid and scybalous; the blood drawn appears natural; pulse 96, pretty full and strong; she appears sullen, and will not answer questions; sometimes she is furious, and sometimes seeks retirement.—*Repet. pilul. et mist. purg.*

22d.—Medicines have operated well; motions remarkably morbid, dark, copious, and offensive; she slept well for two or three hours; continues sullen; complains of uneasiness about the pudenda, which is always similarly affected when she is pregnant; the parts appear excoriated, and covered with an aphthous eruption.—*Assidue*

ma defacta sint pudenda lotione acetatis plumbi, quam etiam in vaginam injiciat. Appl. lumbis hirud. xvij. Sumat pilul. aloë. et hydrarg. unam; vespere et mane. Sumat etiam mist. purg. $\frac{3}{4}$ jv. omni mane.

23d. — Medicines have operated well; motions copious and still morbid; much irritation and itching of the pudenda; mind much distracted. — Omit. lotio acetatis plumbi. Cont. pilul. et mist. purg. Adhibeatur pudendis lotio nitro-muriatica.

Vespere. — Irritation diminished.

24th. — Medicine operated well; the appearance of the motions has much improved; shews some feeling of affection for her child, but none for her husband; she is evidently more rational and manageable. — Cont. med.

25th. — Improves rapidly. — Cont. med.

26th. — Convalescent; irritation of the pudenda has subsided; she speaks rationally, and has dressed herself neatly this day, for the first time; her aversion to her husband is considerably diminished. — Cont. med. et lotio, ut antea.

27th. — She is much recovered, and desires to go home; she occasionally indicates aversion towards her husband, but her resentment seems to arise from jealousy. — Cont. med. — 29th. Discharged.

CASE CLXI. — *Mental Alienation.*

Sick Quarters, Garrison Hospital, November 30th, 1819. — Admitted Lieutenant —, of His Majesty's — Dragoons. He was sent from Arcot to Madras under a guard. The gentlemen who brought him stated, that he fancied himself St. John the Baptist, and in consequence had allowed his beard to grow unshaven for several months. At present he wears a sullen and dignified mien, considers himself a superior being, and will not condescend to speak to strangers. So strongly is he impressed with this idea of the sanctity of his person, that any attempt to convince him of his absurdity renders him exceedingly violent. Pulse very full and strong; eyes suffused and red; face full and flushed; tongue loaded with sordes; he traverses the veranda, spouting long passages from the Scriptures. He cannot be persuaded to take medicine, asserting that he is the most competent to judge of the nature of his situation, as he understands the medical art by divine inspiration. Repeated attempts being made to subdue his prejudice, he becomes only more furious and ungovernable.

December 3d. — It being necessary to relinquish all attempts to administer medicine until he could be brought under the influence of authority, we have hitherto directed our whole attention to gain an ascendancy over him, by conceding trifles, and main-

taining, with gentle but unyielding perseverance, subjects of importance. We have visited him frequently, and talked to him of the various subjects that occupy his mind, and in the course of two days have acquired such an influence over him, that we can now induce him to submit to the medical treatment he requires.—R Submur. hydrarg. gr. xx.; pulv. antimon. gr. iij.; conservæ rosæ, q. s. Fiat pilul. h. s. s. R Infus. sennæ, ℥jv.; sulph. magnes. ℥jv. Fiat haustus, cras primo mane sumend.

4th. — The medicines have operated slightly; face flushed; eyes suffused and red; pulse soft, full, and strong; tongue foul; alvine evacuation fetid, dark-coloured, and scybalous; strength unimpaired; mental affection unchanged; has been calculating the destruction of the world, and finds it will happen in two months from the present period. — Repet. pilul. submur. hydrarg. et pulv. antim. ut heri præscripta, horâ somni, necnon haustus purgans cras primo mane.

5th. — The purgatives have acted better this morning, and removed dark, offensive, viscid matters; slept well in the night; no alteration in the wild, red, suffused appearance of the eyes; mental affection unchanged; complains of pain over the forehead. — Appl. singulis temporibus hirud. vj. et occipiti viij. Assiduè lavetur caput acido acetico, cum multo aquæ frigidæ diluto.

Vespere. — Considerable benefit from the leeches; face flushed; eyes still suffused. — Repet. pilul. ut heri, horâ somni, etiam haustus purgans ut antea, cras mane.

6th. — Dejections very copious from the medicine, tenacious and black; slept very well in the night; pulse 98, very full and strong; tongue cleaner; redness of the face and suffusion of the eyes continue. — Mittatur sanguis è brachio, ad ℥xxjv.

Vespere. — The bleeding has been attended with decided advantage; he is much quieter, and less excited than usual; he has been occupied the whole day in calculating the period of the destruction of the world; it was with some difficulty we could prevail with him in order to effect the bleeding. — Repet. pilul. horâ somni, et haustus purgans primo mane, ut antea.

7th. — Medicines operate freely; he slept pretty well the first part of the night, but, having become restless, he rose and walked in the veranda from midnight till near five o'clock in the morning; from this period he slept till nine o'clock; pulse 86, full and strong, but more regular; tongue cleaner; alvine evacuations more natural; face less flushed; appetite improved; no fever nor corporeal sufferings; he is still occupied in calculations, and endeavours to prove that Cambridge, and Trinity College, Dublin, communicate with the fort by a narrow passage, which he pretends to shew us: he is perfectly quiet and manageable when we are present. — R Massæ pilul. aloës cum myrrh. ℥j.; pilul. hydrarg. ℥ss.; syrup. simp. q. s. Ft. pilul. xxx. quarum unam

capiat vespere et mane. R Infus. amar. ℥viii.; infus. sennæ, ℥jv.; tinct. cardam. ℥jss. Ft. mist. cujus cyathum capiat vespere et mane.

16th.—The medicines prescribed on the 7th have been continued, but have not been sufficiently active these last two days; bowels becoming quite regular; general health much improved; mental faculties still in a deranged state; sometimes he fancies himself Lord Wellington, at other times Buonaparte;—in short, he is always the principal character spoken of; but he is infinitely more manageable than he was, and sometimes talks rationally.—Mist. aperiens olim præscripta, add. sulph. magnes. ℥j. Cont. pilul. ut antea.

17th to 31st.—His health is perfectly good, and he is becoming more rational, but his mind is still much affected; he is now revolutionising all Europe, and pretends that the spirit of freedom is extending to India.—Cont. mist. et pilul. ut antea.

1820.—*January* 1st to 12th.—Very much improved in every respect; had his beard shaved this morning by his own desire; he expresses a wish to leave the quarters and return to his regiment, but he is not yet sufficiently recovered.—Cont. pilul. et mist.

13th, 14th, 15th.—He is becoming more rational daily, and his mental affection only recurs occasionally; not being allowed to join his corps, he is desirous of going to Europe, which we have promised as soon as an opportunity occurs.—Cont. med.

16th, 17th, 18th.—Takes exercise on the top of the hospital, and returns to his quarters regularly without any attendance.—Cont. med.

19th to 31st.—He is improving very much in all respects,—Intermittantur med.

February 14th.—From the 1st of February he took regular exercise, and all restraint was removed; he always took a course of purgative medicines at the change of the moon. On the 28th of February he was reported to be in a proper state of health to embark for England; and he embarks to-day (14th March) on board the Lord Wellington, quite recovered.

CASE CLXII.—*Great Mental Excitement, followed by Alienation, &c.*

Sick Quarters, Garrison Hospital, April 30th, 1820.—Admitted Lieutenant —, of the — Regiment Native Infantry, conducted hither from Hyderabad. No account of his condition has yet been communicated by his medical attendants.

May 1st.—He evidently labours under great mental excitement, but we are by no means prepared to call it insanity. He talks rapidly, but not incoherently; his imagination, however, seems to dwell too much on metaphysical subjects; complains

of the sensation of weight in the head; pulse full and strong; tongue foul; bowels constipated; constipation, he says, is habitual to him. — R Submur. hydrarg. gr. x.; pulv. ipecac. gr. ij.; conservæ rosæ, q. s. Ft. pilul. h. s. s. Sumat mist. purg. ℥iij. cras mane.

2d. — Medicine has operated well; symptoms nearly as when last reported. — Cont. purgantia.

3d. — Alvine evacuations very copious; he seems much improved; his conversation is perfectly rational, but the rapidity of his utterance, and the inconstant motion of his eyes, indicate a considerable degree of mental excitement.

Vespere. — Thinks the sensation of weight in the head has increased; pulse fuller and stronger. — Applicentur utrisque temporibus hirudines, vj. Cont. purg.

4th. — Sensation of weight in the head much alleviated by the leeches; pulse still sharp and hard; he utters with the same rapidity as usual, but dwells more on some differences which took place between himself and some of the officers of his regiment, than on metaphysics. — Adhibeantur denuò temporibus hirudines ut olim præscriptæ. Cont. purg.

5th. — Much benefit has been derived from the leeches; dejections copious, very fetid, viscid, and tenacious, but of a natural colour; tongue improved; his conversation is puerile and nugatory. — R Massæ pilul. hydrarg. ℥ss.; aloës cum myrrhâ, ℥j.; syr. simp. q. s. Formentur in pilul. xxx. quarum j. ter in die capiat. R Infus. amar. ℥viij.; infus. sennæ, ℥jv.; tinct. cardam. ℥jss.; sulph. magnes. ℥j. Ft. mist. cujus cyathum vespere et mane sumendus.

6th. — Dejections copious, fetid, dark-coloured, and tenacious; symptoms in other respects nearly the same. — Cont. med.

7th. — The indications of mental excitement continue; pulse soft, full, and regular; skin natural; tongue white; he regrets much that he has always neglected his bowels. — Cont. med. purg.

8th. — Bowels quite open, and he in consequence feels himself much relieved. — Cont. med. purg.

9th, 10th, and 11th. — Says he has no complaint; he evidently labours, however, under a considerable degree of mental excitement; he is restless all the night, walks incessantly all the day, and converses with the utmost rapidity and inconstancy on every subject; his ideas are, however, rationally expressed, and his actions are innocent; pulse frequent, but not too full or hard; skin natural; tongue very foul. — Cont. med. purg.

12th. — Dejections copious, pretty natural; tongue continues foul. — Cont. med.

13th. — Pulse 86, soft and full; skin moist and warm; tongue still very foul; otherwise there is no change. — R Mist. salin. ℥j.; spirit. æther. nitros. ℥ss.; vin. antim. ℥ss.; aquæ ammon. 3jss. Ft. mist. cujus tria cochlearia ampla tertiâ quâque horâ capiat. Cont. med. olim præscripta.

14th. — Slept a good deal since last report; dejections copious, black, and fetid; pulse rather full and sharp; tongue white; belly somewhat tense and painful. — Foveatur abdom. Adhibeatur enema domest. si opus fuerit. Cont. med.

15th. — Eyes suffused; pulse firm, rather full; skin moist, rather warm; tongue still much disordered; bowels open; stools morbid. — Cont. med.

16th. — No change.

17th. — Appears very animated; pulse full, rather frequent; skin cool and moist; tongue white and moist; dejections scanty; complains of giddiness, and a confused, uneasy sensation in the head. — Mittantur è brachio sanguinis ℥xvj. quàm primùm. Mist. amar. olim præscriptæ, add. sulph. magnes. ℥ss. Cont. alia.

Vespere. — He was seized with syncope after fourteen ounces of blood were drawn. The blood has a flat surface, and a very small proportion of serum has separated; he feels at present comfortable; pulse more natural; skin natural; tongue somewhat improved. — Cont. med.

19th, 20th, 21st, and 22d. — He converses with much more deliberation, and appears altogether greatly improved; tongue clean; bowels active; alvine evacuations still fetid, but of a natural colour; appetite good. — Cont. med.

23d. — Mental excitement considerably increased; talks with great rapidity, and selects subjects with which he is totally unacquainted; his conception of his own talents and dignity is perfectly extravagant; he considers himself equal to Sir Isaac Newton; pulse rather small; skin natural; tongue foul. — Cont. med.

24th. — Appears tranquil; tongue improved; bowels open. — Cont. med.

25th, to *June* 1st. — Much improved. — Omit. pilul. Cont. alia.

7th. — Has continued pretty well since the last report; tongue white and loaded; he complains of slight nausea. — Adhibeatur emet. stat.

8th. — Vomited matter resembling bile; slight catharsis; nausea has ceased; he feels quite easy and comfortable. — Cont. mist. purg.

9th to 20th. — The purging mixture has been continued daily; he is perfectly well. — No medicine.

October 1st. — He is now so well that he does not wish to go to Europe, but to join his corps.

10th. — Left Madras to join his regiment.

CASE CLXIII.—*Melancholia, with Mental Alienation.*

Sick Quarters, Garrison Hospital, May 15th, 1820.—Admitted Lieut. —, of the — Regiment, N. I. He was conducted hither by a guard from Vizagapatam, bearing certificates from Surgeon Underwood and Assistant-Surgeon Boyd. These gentlemen stated him to be in such a state of mental derangement as to render it necessary to put him under restraint; he answers questions rationally, but with great timidity and suspicion, apparently from fear or shame; eyes red and suffused; pulse frequent and irregular; tongue foul.—R Submur. hydrarg. gr. xx.; pulv. antim. gr. iij.; syrup. simp. q. s. Fiat pilul. h. s. s. Sumat mist. purg. ℥jv. cras mane.

16th.—Passed the night very restlessly; was troublesome to his attendants; the character of his madness appears to be melancholic; he is dejected, very suspicious, constantly watching, and endeavours to hide himself; he wanders very much in his ideas when left to himself, but answers sometimes with acuteness when aroused from his reverie; he is often angry with his servants, but in our presence he becomes quiet and manageable; eyes red, full, prominent; pupils much dilated; pulse soft and full; tongue white; bowels generally constipated; complains of pain of the right side, particularly about the region of the cæcum; complains also of headach.—Appl. region. iliacæ dextræ xvj. et temporibus xij. hirud. Repet. horâ somni pilul. et cras primo mane. Mist. purg. ut heri præscripta.

17th.—Medicines have operated freely; dejections fetid, and of an unnatural appearance, black and viscid; headach less severe; pain in the right iliac region continues; eyes less suffused; pulse small; tongue improved; his ideas still much deranged; and he constantly endeavours to hide himself; he indicates an uncommon degree of suspicion and calidity.—Iterum applicentur regioni iliacæ dextræ hirudines xv. Repet. pilul. et mist. purg.

18th.—Dejections copious, dark-coloured, and tenacious; the pain in the right iliac region continues; in other respects he is better.—Applicentur hirudines xv. regioni iliacæ dextræ. Sumat pilul. aloës et calom. j. ter indies. R Infus. gentian. comp. ℥vij.; infus. sennæ, ℥jv.; tinct. cardamom. ℥jss.; sulph. magnesiæ, ℥j. M. sumat cyathum vespere et mane.

19th to 22d.—Pain of the side much alleviated; medicines operate freely; countenance much improved; pulse 90, strong, not full or hard; tongue rather foul; he indicates less anxiety and suspicion, talks more rationally, and seems to be aware of the aberrations of mind under which he has laboured; he desires to

know how he had been brought to Madras from Vizagapatam, and whether he was then in a state of derangement. — Cont. med.

23d. — Dejections frequent, of a more natural appearance; no pain of the side; pulse and skin natural; tongue white; no thirst; appetite good; the wounds made by the leeches are painful; answers questions rationally. — Cont. med.

Vespere. — Indicated a slight degree of fever during the day; he now sweats profusely; considerable debility. — R Tinct. opii, mxxx.; spirit. æther. nitros., vini antim. āā ʒss.; mist. camph. ʒjss. Ft. haustus, horâ somni sumend.

24th. — Passed the night very comfortably; dejections scanty, mucous; pulse good; tongue foul. — Sumat mist. purg. ʒjv. cui olei menth. piperitæ, miiij. adjunctæ sunt. Omit. pilul. et mist. amar. Diæta tenuis.

Vespere. — Sumat submur. hydrarg. gr. x. horâ somni.

25th. — Dejections tenacious, fetid, and black, with slight tenesmus; skin warm, covered with a profuse sweat; considerable debility; he complains of spasms in the legs; state of his mental faculties very much improved. — Adhibeatur enema purg. Benè fricentur crura. Repet. submur. hydrarg. dosis horâ somni.

26th. — Passed the night comfortably; tenesmus less; tongue foul; pulse and skin natural; he is rapidly recovering the use of his intellectual faculties, and associates with the other sick officers in the quarters; he expresses a wish to go to Europe. — Sumat mist. purg. ʒjv. Sumat etiam pilul. aloës cum calom. et ipecac., ter in die. — 27th. No change.

28th. — He has become more troublesome and violent during the night; bowels very irregular; complains of great uneasiness about the anus. — Repet. pilul. ut pridie præscripta. Adhibeatur enema anodyn. nocte et mane.

29th. — Uneasiness about the anus abated; pulse and skin natural; tongue still foul; gums tender. — Cont. med.

30th. — No change. — Cont.

31st. — A recurrence of slight tenesmus; he is now perfectly rational. — Cont. med.

June 10th. — The pills and anodyne enema, with a purgative every third day, have been continued since last report, without any decided advantage. Dejections frequent, mucous, tinged with blood; slight tenesmus; tongue villous and white; thirst urgent; appetite impaired; pulse and skin natural; complains of pain in the epigastric region and along the course of the colon; great weakness. — Imponantur statim hirudines xv. partibus abdominis super coli tractum incumbentibus. Foveatur imum abdomen. Adhibeatur enema emolliens. R Submur. hydrarg. gr. x.; opii, gr. j.; conservæ rosæ, q. s. Ft. pilul. horâ somni sumend. Sumat mist. purg. cras mane.

11th.—Medicine acted pretty well; pain of the abdomen much abated; pulse 100, full, not hard; tongue white; dejections scanty, feculent, tenacious; great sickness at stomach; occasional vomiting of bitter matter; eyes quite yellow; great thirst; no appetite; complains of weakness, and of a great oppression about the præcordia; there is considerable enlargement under the ribs; his mental derangement has recurred, but in a slight degree, and of a different character; instead of being timid and suspicious, he is now bold and daring, and will not suffer any one to approach him. Being called to visit him during the paroxysm, he immediately became quiet in our presence.—Habeat emetic. statim. Imponatur epigastrio cataplasma.

Vespere.—The emetic operated very well; he vomited a very great quantity of yellowish-green, thick, viscid matter, resembling bile, and is wonderfully relieved in every respect.—R Submur. hydrarg. gr. xx.; opii, gr. ij.; conservæ rosæ, q. s. Ft. bolus, hora somni sumend. Sumat mist. purg. cras mane.

12th.—Passed the night excellently, and is considerably better; no pain; tongue cleaner; dejections tinged with bilious matter.—Repet. pilul. aloës et calom. j. ter in die. Repet. etiam mist. amar. cras mane.

13th.—Improving much.

This course was continued till the end of June, when he was perfectly recovered in health, though he had occasional alienations of mind at the change of the moon.

August 28th.—He is now perfectly recovered, but he remained in hospital till October, when he embarked for Europe, as we considered that the sea-voyage would confirm his recovery.

SUB-SECTION III.

Cursory Remarks on the presence of Worms in the Large Bowels.

INTESTINAL worms are very frequently met with in practice within the tropics; and are not only a frequent disease of themselves, but also a cause of other diseases, especially amongst the natives of Hindostan. When occurring amongst Europeans, they are generally the consequence of torpid function of the large bowels, and of accumulations of morbid secretions and

fæcal matters in this part of the alimentary canal. *Ascarides*, *lumbrici*, and *tæniæ*, are the kinds of worms most frequently observed, more particularly the *lumbrici*. They sometimes occasion no marked symptoms; at other times, the usual signs indicating their existence in the *prima via* are well marked. In the natives of India they are often either productive of various functional and symptomatic disorders, or are complicated with them. Indeed, very few cases of disease are met with amongst the Hindoo population, where intestinal worms are not found in the alvine evacuations procured during medical treatment. Whilst the Native Hospital at Arnée* was under our direction, there was scarcely one patient in ten in whom intestinal worms, chiefly *ascarides* and *lumbrici*, did not exist; and in the numerous cases thus circumstanced, a mode of cure which had strict reference to this morbid condition of the alimentary canal, was generally successfully resorted to.

Cases of *asthenia*, *dyspepsia*, colicky pains, *diarrhœa*, vomiting, pains of the head, of the upper and lower extremities, pains of the back, slight fever, hæmorrhoids, rheumatism either with or without fever, epilepsy, hemeralopia, or marasmus, were most frequently observed as the consequences or concomitants of worms in the large bowels, and of morbid accumulations in the same situation; the worms being, in all these cases, evidently the consequence of the morbid secretions formed upon the digestive mucous surface; and the disorders enumerated above being symptomatic of this state, as well as of the irritation occasioned by the worms themselves.

In India, and in warm climates generally, the *predisposing causes* of worms are present in a very remarkable manner. Of these, the slender and delicate

* The Native Hospital at Arnée was established for the reception of those native soldiers who, having been upon foreign service at Java or elsewhere, had returned to the Madras Presidency in bad health, or with broken constitutions, and whom, although entitled to retire upon pensions; the government was anxious to restore to health, as a farther acknowledgment of their services, and an encouragement to the native troops of the country. The barracks at Arnée were, on this occasion, converted into an hospital, capable of accommodating about one thousand sick men, and put under our direction, with a suitable establishment; and, with few exceptions, the soldiers admitted were either discharged fit for service, or were pensioned off, with an improved state of health and restored constitutions.

constitutions of the natives; the relaxed state of their fibres, and their asthenic habit of body; their glutinous, viscous, and farinaceous diet; the moist and relaxing state of the atmosphere; the nature of the soil and particular situations, and the great exuberance of the vegetable creation covering them in warm countries, and the consequently impure states of the atmosphere, are particularly deserving notice. Many of the predisposing causes of verminous disease operate upon Europeans who have removed to those climates, as well as upon the natives themselves. Indeed, the influence of the climate is such as tends to assimilate in many respects the constitution of the former to that of the latter, and thus to predispose to the same general pathological conditions of disease. When, therefore, the European residenter in warm climates is weakened by attacks of acute disease,—by living in moist and low situations,—by the use of impure water,—and by other concomitant causes of disease, abounding in an intertropical country,—he becomes extremely obnoxious to the invasion of intestinal worms, unless he attends with uniform care to his digestive functions, and preserves an open state of his bowels; thereby preventing the accumulation of morbid secretions and faecal matters in the cæcum and colon.

It will generally be found amongst the natives of warm climates, and among those Europeans who have been much weakened by their residence in them, that the secretions, which form the principal part of the faecal discharge, are seldom thrown off from the mucous surface of the large bowels in so quick a manner as in the robust individual who enjoys an energetic state of the circulation and of all the organic functions; and being thus retained, they form at least the soil in which worms are reared, whatever may be the primary source from which these creatures proceed. Hence the importance of endeavouring to prevent the retention of morbid secretions and faecal matters, and to impart energy to the digestive functions generally.

The possibility of worms perforating the parietes of the intestines has been argued for by some pathologists, and denied by others. Without pretending to decide the question, we shall adduce the particulars of a case which came before us, in which the parietes of the bowel must have been perforated by them; but whether the perforation was effected previous to

inflammation and ulceration having been excited in the part of the intestine in which they were lodged, or subsequently to that event, is a point which cannot be determined, from the imperfect history of the case, to which we were called only in its last stages.

CASE CLXIV.—*In which Lumbrici passed from an opening at the Umbilicus.*

August 5th, 1820.—J. W——, four years of age, according to the account furnished by his father, began to complain, about three months since, of swelling and hardness about the umbilicus, with pain on pressure. Opening medicines were prescribed by the medical man in attendance; and afterwards, finding that the tumour did not subside from their operation, poultices were applied. From the middle of April, the time at which the hardness was first detected, until the end of July, it gradually increased. The bowels, however, were always regular, even without the assistance of medicine, and the appetite was unimpaired. During July the swelling had increased considerably, was fluctuating, and slightly inflamed. The child's temper became irritable, and considerable symptomatic fever, with loss of appetite and cerebral irritation, supervened. Animal food was now abstained from, and saline diaphoretics and laxatives were given. On the 1st of August the abscess broke through two openings in the umbilicus, and discharged a great quantity of thick offensive matter. The usual dressings were applied. On the 2d, about a pint of yellowish watery fluid was discharged, with some thick offensive matter, similar to that which passed on the preceding day; and as a substance appeared to protrude through the aperture, which the father of the child fancied was the bowel itself, he became alarmed, and sent for us. We immediately drew from the opening two large lumbrici. This was the first time of our seeing the case. After this the child lived several days: the fæces, with eight or nine large lumbrici, passed through the opening at the umbilicus, and very little by the anus, during this period.

On examination, the lower part of the ilium was found obstructed, its convolutions agglutinated together, and its canal, in parts, constricted to the size of a goose-quill. It presented no marks of recent inflammation, and was of a pale colour, both externally and internally. The agglutinated mass of small intestines adhered also to the abdominal parietes, around the umbilicus; and one of the most superficial convolutions of the intestine had an ulcerated opening through it, communicating with the external aperture at the umbilicus. The other abdominal viscera were natural in appearance.

With respect to the *treatment* of worms in the bowels, we have little to

add to what is very generally known on the subject. The propriety of commencing our practice, in cases of this description, with purgatives, especially those which possess an anthelmintic property, and continuing the exhibition of them as long as the evacuations possess a morbid character, is well understood, and generally acted upon. In many habits and constitutions, however, more particularly amongst the natives of India, purgative anthelmintics will not always succeed in removing worms, and certainly have little effect in preventing their regeneration. In such cases, therefore, purgatives should be combined with other remedies which experience has shewn to have considerable influence in expelling worms from the body, and preventing their regeneration. So long, however, as the mucous surface of the bowels is covered with mucous sordes and morbid secretions, and the cells of the colon are loaded with fæcal matters, purgatives which act most efficaciously in removing those collections are indispensably requisite. It is chiefly from their activity in removing those accumulations, that calomel, jalap, aloes, castor oil, senna, rhubarb, injections of turpentine, hellebore, and some other remedies, are generally so beneficially employed in cases of worms.

After the above remedies, combined according to the peculiarities of the case, have been exhibited, we have generally prescribed enemata of the oil of turpentine and castor oil with great advantage; and, after the fæcal accumulations and morbid secretions have been removed by the above means, we have always resorted to the use of tonics combined with laxatives with very manifest advantage. In cases of this description, after fæcal collections have been removed, the different preparations of iron are very serviceable, and in many cases, when combined with laxatives, have succeeded in procuring the expulsion of worms, after the more active purgatives had been employed for a very considerable time.

Amongst the natives of India, who are so very generally infested by worms, the preparations of iron combined with tonics, or with anti-spasmodic anthelmintics, such as assafoetida, myrrh, camphor, or with laxatives and purgatives, as rhubarb, sulphate of potash, jalap, &c. are generally beneficially prescribed from the commencement of the treatment. When, however, they are not combined with purgatives, it is generally requisite to give purgatives in the

intervals between their exhibition. Amongst this class of the community the combination of purgative medicines with warm cardiacs, tonics, and stimulants, is absolutely required in almost every case of disease, but more especially in those depending upon the presence of worms in the *prima via*, and a great majority of their ailments depend upon this cause. The following formulæ were very generally and beneficially employed amongst them, in the numerous cases which came before us whilst in charge of the Native Hospital at Arnée.

R Pulv. rhei, gr. xij.
 Pulv. zingiberis, gr. vj.
 Ferri sulphatis, gr. ij.
 Infus. gentian. comp. ℥jss. M.
 Fiat haustus, bis in die capiendus.

R Pulv. cinchonæ, ℥ij.
 Pulv. myrrhæ, ℥ss.
 Ferri sulphatis, ℥ij.
 Aquæ puræ, lbjss. Digere per horas xxjv. leni calore, dein cola.
 Capiat f. ℥ij. ad f. ℥ss. pro dose.

The above means have been most frequently prescribed in cases of ascarides and lumbrici. In the former, however, we generally found enemata very serviceable, and have either employed those already alluded to, or the remedies enumerated above, in this manner.

In cases of tænia, the oil of turpentine, given by the mouth or by injection, has been the most successful remedy in our practice. We have also given the bark of the root of the pomegranate-tree with very considerable benefit, both in the form of decoction and powder, as frequently employed by the natives of India, and as recommended by Dr. Fleming, and afterwards by Mr. Breton.*

* See "A Catalogue of Indian Medicinal Plants and Drugs, &c." by John Fleming, M.D., &c. and Mr. Breton's Observations on the Bark of the Pomegranate Tree, in the "Transactions of the Medical and Chirurgical Society," Vol. XI. page 301.

SUB-SECTION IV.

Of Hemeralopia, or Night Blindness.

THIS affection is very frequently observed between the tropics, more especially amongst the natives of India. It has generally been supposed to depend upon a torpid condition of the retina and nerves of the eye, following the strong stimulus of light, and it has likewise been imputed to the state of the sensorium. Whether either of these opinions be correct, or whether or not both states actually obtain, we shall not attempt to decide. Whatever affection may be superinduced in the sensorium or in the retina and nerves of the eye, giving rise to this particular derangement of its functions, we believe to depend upon debility, accompanied with accumulations of morbid secretions in the *prima via*, more particularly in the cæcum and colon, together with torpid function of the liver and stomach. The disease among the natives is generally induced by insufficient nourishment, and want of attention to the functions of the bowels. Numerous and uniform proofs of the correctness of this view of the nature and relations of this affection have come before us in practice; and the treatment founded upon it has uniformly proved successful.

We have found a well-regulated diet and purgative medicines sufficient for the removal of hemeralopia, frequently without the assistance of any other remedy. Amongst Europeans, these medicines are the most unequivocally necessary; for the bowels of those labouring under this affection are often particularly torpid, and require the most active purgatives to produce any effect upon them. However, after the energetic employment of these medicines for two or three days, they generally succeed in bringing away copious, offensive, dark-coloured, gelatinous, or otherwise morbid stools, when the bowels become more sensible to the stimulus of purgative remedies, and smaller doses or gentler means are then sufficient to produce the requisite effect.

During the employment of purgatives for the cure of hemeralopia, it is very usual to observe worms passed in the stools. Among the natives of India, the presence of worms in the *prima via* of those complaining of this affection is extremely common. We are, however, inclined to view this circumstance as chiefly one of coincidence rather than as one of cause and effect; or, in other words, we consider that the insufficient nourishment, and the functional disorder of the *prima via*, leading to the accumulation of sordes and morbid secretions in the large bowels, whilst they favour the generation of intestinal worms, will, in some cases, give rise also to the disorder of vision now under consideration. Whether it be thus complicated or not, purgatives and a suitable diet are equally requisite to its cure; but in such complications more particularly, and in all cases more or less, the practitioner should endeavour to impart energy to the alimentary canal, after the morbid secretions have been removed by the course of purgatives already employed. If this indication be not acted upon, the re-accumulation of the morbid secretions will soon take place; and if there be a tendency to the formation of worms in the alimentary canal,—a tendency existing in almost all native Indians,—these animals will soon make their appearance again, and lead to farther disturbance in the system.

Hence it will be requisite, in the treatment of hemeralopia occurring in debilitated Europeans and in natives, amongst whom the affection is frequently met with, to prescribe a nourishing diet and tonic remedies as soon as the morbid accumulations have been carried out of the system: but in all cases it will be necessary to combine the tonics with purgatives or aperients, or to give them alternately, so as to preserve a freely open state of the bowels during the tonic course. In some cases it will be also requisite to give, at intervals of six or seven days, a brisk purgative, in order to carry off whatever accumulations may have formed during the adoption of this latter part of the course of treatment. Indeed, in some cases of this affection occurring in the natives of Hindostan, the amendment will not be very rapid until a sufficiently nourishing diet be directed, and tonics be either added to the purgatives employed, or given in the intervals.

As to the purgatives and tonics which we have found most frequently

beneficial in hemeralopia, it may be requisite to offer a few remarks. A full dose of calomel given at bed-time, and followed early in the morning by the compound jalap powder or the compound infusion of senna with salts, have been usually prescribed by us at the commencement of the treatment; and we have frequently promoted the operation of these remedies by directing the injection of a purgative enema a short time after the exhibition of the opening draught. This plan has been generally continued daily until the stools assumed a natural appearance, and been varied according as the character of the motions procured by the medicines improved. After three, four, or five days, the stools generally became less morbid; when, instead of the large doses of calomel, alterative doses only were prescribed, generally in combination with aloes, or the aloes and myrrh pill; and the bitter aperient mixture, consisting of the compound infusions of gentian and senna, was given, so as to preserve a free action of the bowels, until the disorder was removed, and the alimentary canal assumed its natural functions.

When this affection is complicated with worms in the alimentary canal, as it frequently is amongst the natives of India, smart cathartics, followed by cathartic enemata, are at first requisite, until the viscid and tenacious sordes in which the worms are usually lodged are removed; after which the treatment already recommended for worms should be put in practice, and pursued steadily until the functions of the digestive organs are restored, and the countenance and habit of body assume a more healthy appearance. But our attention should not terminate with the attainment of this end. It must be recollected, that the disorder of the alimentary canal, from which the affection under consideration proceeds, is very apt to return, if the actions of this part of the economy be not promoted, from time to time, by the employment of suitable medicines. For this purpose, tonics in combination with aperients should be prescribed, and the regular functions of the bowels attended to on the part of the patient as well as on that of his medical adviser. In this particular description of cases, rhubarb in conjunction with the sulphate of iron and a little powdered ginger, as a corrigent, is extremely beneficial, and, when taken to a sufficient extent to act gently upon the bowels, tends most essentially to prevent the accumulation of morbid secretions and the generation of worms, and to restore the strength of the patient.

We have often resorted to the application of blisters behind the ears and on the temples in this affection; but although we conceive that benefit has occasionally resulted from the practice, we have viewed it more as an auxiliary than as a principal means of cure. If the patient complain of headach, or if there be symptoms of congestion of blood in the head, as indicated by fulness of the countenance, injection of the conjunctiva, weight of the head, or heaviness, &c., either a few leeches may be applied, or the head should be frequently sponged with cold water, or both measures adopted.

The following cases, taken without selection from many others in our hospital diaries, will further illustrate what we have advanced in the present section.

CASE CLXV. — *Hemeralopia.*

LECHMIAH, Sepoy, 1st Battalion of the 6th Regiment Native Infantry. Complains of very bad sight, particularly at night. The pupils, however, dilate on exposure to light, but there is a milky appearance in the lens. His health generally is tolerably good, and his bowels are regular.

April 10th. — Pilul. hydrarg. gr. vj. in die. — 11th and 12th. Cont.

13th. — Pulv. purg. — 14th. Purged only twice; stools black and very offensive. — Repet. pilul. hydrarg. — 15th. Repet. pilul. hydrarg. — 16th. Pulv. purg.

17th. — Purged five times, stools of a yellow colour, and he passed eight lumbrici. — Repet. pilul. hydrarg.

18th. — Feels much better than he has done for several months past, but his eyes continue the same. — Repet. pilul. hydrarg.

19th. — Mouth slightly affected. — Cont. pilul. hydrarg. — 20th. Pulv. purg.

21st. — Had ten yellow and green-coloured stools; passed ten lumbrici. — No med.

22d. — Mouth sore; otherwise much better. — R Pulv. rhæi, gr. x.; pulv. zingib. gr. vj.; ferri sulph. mij. Ft. pulv. bis die sumend. cum infus. gentian. comp. ʒjss.

23d. — Purged four times; stools yellow; passed four small worms. — Repet. med.

24th. — Cont. med. ut antea.

25th. — Had four natural stools; eyes the same.

26th to 29th. — Repet. med.

May 1st. — Much better; can distinguish objects more clearly; his appearance is wonderfully improved. — No med. — 2d. Ol. ricini, ʒij.

3d.—Purged four times; evacuations natural; no worms; good appetite.—Full diet and punch. Repet. infus. amar. cum tinct. ferri muriat. mxx. ter die.

4th to 6th.—Eyesight perfectly clear, and has not any complaint whatever.—Continued the above till the 17th, when it was discontinued: his sight perfectly restored, and fit for duty. Discharged.

CASE CLXVI.—*Hemeralopia, Emaciation, &c.*

JAGANADA SING, 1st Battalion of the 6th Regiment Native Infantry, a stout, healthy man, while on foreign service lost his sight, particularly after sunset, and now he cannot see at all at night; his general health has suffered a good deal, and he is rather emaciated.

April 10th.—Pilul. hydrarg. gr. vj. in die.

11th and 12th.—Cont.—13th. Pulv. purg.

14th.—Purged and vomited frequently,—green bilious matter.—Repet. pilul. hydr.

15th.—Had three purging stools, of the same appearance as those of the preceding day; no other alteration.—Cont. pilul. hydrarg.—16th. Pulv. purg.

17th.—Vomited once and purged three times,—green bilious matter.—Repet. pilul. ut antea.

18th and 19th.—Pilul. hydrarg. ut antea.—20th. Pulv. purg.

21st.—Vomited a quantity of very acid matter from his stomach, and had three green evacuations; eyes the same.—Repet. pilul. hydrarg.

22d.—Thinks himself much better this morning, and he says that he can see better.—Omit. med.

23d.—R Pulv. rhæi, gr. x.; pulv. zingib. gr. vj.; ferri sulph. gr. ij. M. ft. pulv. bis die, cum infus. gentian. comp. ʒjss.

24th.—Cont.—25th. Cont.

26th.—Wonderfully better in every respect; appetite much improved, and he looks quite healthy; bowels perfectly natural, and can see much better.—Cont. med. Full diet and punch.

27th.—Repet. pilul. hydrarg. no. 2. in die. Cont. alia.

28th.—Purged ten times; stools watery.—Habeat calom. gr. viij. stat. Repet. medicament.

29th.—Purged six times; stools more natural.—Cont. pilul. hydrarg. ut antea. et pulv. cum infus. gentian.

30th.—Nearly well.—Cont. omnia.

May 1st.—Cont. med. — 2d and 3d. Cont. med.

4th.—Can see perfectly well, and feels fit for duty; the improvement in this man's appearance is wonderful. — Discontinue med.

18th.—Fit for duty, and discharged.

CASE CLXVII. — *Hemeralopia, with marked Disorder of the Digestive Organs.*

CUNDAPAH NAIG, 2d Battalion of the 12th Regiment Native Infantry. Complains of a burning sensation in the palms of his hands and the soles of his feet, which is very troublesome to him; his bowels are very irregular, sometimes purged, and sometimes the reverse; passes round, hard balls in his fæces; dimness in his eyes, and cannot distinguish objects very distinctly, particularly after sunset; no appetite, and disturbed sleep.—April 10th, 1812. R Pilul. hydrarg. gr. vj. in die.

13th.—Pulv. purg. stat.

14th.—Purged four times, and vomited once; thinks himself better, though we cannot observe much change. — Repet. pilul. hydrarg. ut antea.

15th.—Repet. pilul. hydrarg. ut antea.

16th.—Feels much better. — Repet. pulv. purg.

17th.—Had four purging stools, of a green colour; his bowels have become more regular, and the burning sensation in his hands and feet is relieved.—Repet. pilul. hydr.

18th.—Had two natural stools; feels better in every respect. — Repet. pilul. hydr.

19th.—Repet. pilul. hydrarg. — 20th. Pulv. purg. stat.

21st.—Had four purging stools, of a natural colour, and finds himself greatly relieved in every respect. — No med.

22d.—An excellent appetite; tongue clean; spirits good, &c. — R Pulv. rhæi, gr. x.; pulv. zingib. gr. vj.; ferri vitriol. gr. ij. M. cum infus. gentian. ʒj.; to be taken every day.

23d.—Purged four times since yesterday, and vomited some green bilious matter. — Repet. pulv. et infus.

24th.—Vomited some green and bitter matter in the night, and was purged twice; he has a bitter taste in his mouth, but his tongue is quite clean. — R Calom. gr. viij. stat. Pulv. et infus. ut antea.

25th.—Has not been purged. — R Ol. ricini, ʒij. stat.

26th.—Purged eight times, and feels much better. — No med.

27th.—Considerably better, but feels weak. — Repet. med. ut antea.

28th.—Was purged four times, and feels rather weak. — No med.

29th. — No med. — 30th. Had two natural stools. — No med.

May 1st. — The burning sensation in his hands and feet nearly gone, and his sight is much improved. — Infus. gentian. comp. \mathfrak{z} j.; tinct. ferri muriat. \mathfrak{mxx} . bis die sum.

2d to 4th. — Continue as before.

5th. — Has a good appetite, and two stools daily; can see perfectly well, and the unpleasant sensations in his hands and feet are gone. — The comp. infus. gentian. with the tinct. ferri muriat. was continued till the 12th, when he was discharged, fit for duty.

CASE CLXVIII. — *Hemeralopia, Debility, Loss of Flesh, &c.*

TONDEROYAH, Sepoy, 1st Battalion of the 6th Regiment Native Infantry, a young man, but has lost his health on foreign service, and for several months past has complained of night blindness. We cannot, however, observe any material change in the appearance of his eye, except that the pupil dilates very much on exposure to light; his appetite is indifferent, and his general appearance shews great debility; his bowels are said to be regular. — April 10th. R Pilul. hydrarg. no. 2. in die.

11th and 12th. — Cont. — 13th. Pulv. purg.

14th. — Vomited and purged fully; passed a great deal of mucus. — Repet. pilul. hydrarg.

15th. — No alteration. — Cont. med. — 16th. Pulv. purg.

17th. — Purged eight times; evacuations natural, and he feels better. — Cont. pilul. hydrarg.

18th. — No alteration. — Repet. pilul. Appl. emplast. lyttæ utrique tempori.

19th. — The blisters have risen very well. — Cont. pilul. — 20th. Pulv. purg.

21st. — Purged nine times; eyes no better. — Cont. pilul.

22d. — Tongue very foul at the root, but he feels much better since he commenced the medicine. — Cont. pilul. R Pulv. rhæi, gr. x.; pulv. zingib. gr. vj.; ferri sulph. gr. ij. M. bis die sumend. cum infus. gentian. comp. \mathfrak{z} jss.

23d. — Vomited and purged a quantity of green bilious matter in the night, and feels much relieved. — Cont. omnia.

24th. — Had three natural evacuations; his appetite is generally improved, and he feels more lively; very little alteration in his eyes. — Cont. med. Full diet.

25th to 29th. — Cont.

30th. — Feels quite well in every respect, except his eyes, which continue the same. — Cont. med.

May 1st. — His general health is perfectly good, and he is as well as ever he was,

except his defect of sight; his bowels are perfectly natural, and his appetite is good. —

Omit. med. Appl. emplast. lyttæ inter scapulas, which is to be kept open.

2d to 8th. — No med. — 9th. Dress the blister, and take pilul. hydrarg. no. 1. in die.

10th. — Cont. — 11th. Pulv. purg.

12th. — Purged four times, perfectly natural; can see much better. — Cont. dressing and pilul. hydrarg.

13th to 15th. — Recovering daily. — Cont. pilul. ut antea.

16th. — Can see perfectly. — Cont. pilul.

17th. — Has no complaint but the blister. — Cont. pilul. — 18th. Cont. med.

19th. — Bitter taste in his mouth; tongue foul. — Sumat hydrarg. submur. gr. x. stat.; post horas quatuor capiat mist. purg. ʒjv.

20th. — Purged only four times; evacuations natural. — Repet. mist. purg.

21st. — Purged five times; tongue clean; can see perfectly well, and is fit for duty. — Omit med.

22d. — The blister has been kept open till now. — Dress it with common dressing.

28th. — Blister healed; he has no complaint; can see quite well; has a good appetite. — Continue diet, &c.

June 6th. — Discharged, fit for duty, and has not had any return.

As all the cases of hemeralopia were similar to those above, and were treated in the same manner, and with equal success, we have thought it unnecessary to detail any more, as these will shew the nature of the whole, and the treatment adapted.

SUB-SECTION V.

Further Remarks on Accumulations of Morbid Matters in the Bowels, as a cause of Nervous and other Ailments.

WE have already, in our preliminary observations on the subject of fæcal accumulations in the large bowels, pointed out the general outline of the relations which a morbidly distended colon has with the other abdominal

viscera ; and we shall now proceed to offer some remarks upon the disturbance which results to the economy in consequence of this state of the large bowels, particularly when it is accompanied with collections of excrementitious matters in its cavity.

When the cæcum and colon are loaded, the functions of adjoining viscera are more or less disturbed, in consequence of the pressure to which they are thereby subjected. The loaded and distended cæcum presses upon the right iliac vessels and nerves ; and hence supervene pains of the right limb, and, in the more severe cases, a degree of partial paralysis is superinduced. When the accumulations take place in the sigmoid flexure of the colon, similar phenomena supervene in the left inferior extremity ; and if the cæcum and sigmoid flexure of the colon are both loaded, as is not infrequently the case, the disorder is extended accordingly to the right and left extremities. In addition to these symptoms, patients thus circumstanced frequently complain of pains in the loins, with occasional disorder of the urinary secretion, which is generally of a deeper colour than natural, and either depositing a very thick sediment, or exhibiting a very thick, mucous-like cloud, or both. When the fæcal accumulations are carried to the greatest height, then, in addition to the above ailments, or even independently of them in some cases, an œdematous state of the lower extremities supervenes, with an inability to use them, or at least a difficulty in subjecting them to the least voluntary exertion.

These symptoms are often viewed either as constituting of themselves the disorder complained of, or as resulting from some other pathological condition than that which we have now assigned. Nor do we deny that they are occasionally dependent upon other causes. We merely wish to point out the cause now under discussion to the attention of the practitioner, in order that he may investigate more closely the state and functions of the large bowels, in those cases wherein the above symptoms are present. If he examine carefully, as he ought, the state of the tongue, the appearance of the alvine evacuations, and the size, sensibility, and condition of the abdomen, he will generally be able to form an opinion as to the existence

of that pathological state of the large bowels, for the presence of which, in ailments of the above description, we have contended.

It is, in our opinion, owing to the collections of morbid matters, and the consequently loaded and distended states of the large bowels, that attacks of rheumatism and gout are often induced, particularly in those who are liable to these diseases, either from hereditary predisposition, previous attacks, or exposure to one or more of the concomitant and exciting causes whence they often spring. That our views are correct in respect of these complaints, seems to be proved by the treatment which is found most successful in removing them; for, in the large majority of cases of this nature, it is uniformly found, that they soon yield after the morbid accumulations in the *prima via*, by which they are generally characterised, have been carried off by a proper employment of purgative remedies.

But the functions of the lower extremities are not the only functions which are disturbed by collections of fæcal matters in the large bowels, and distensions of these viscera. The actions of the liver are generally deranged at the same time with those of the large bowel. Indeed, in many cases the operations of this organ are the first disordered, the biliary secretion being either deficient in quantity, or in its stimulating properties on the bowels; and hence supervenes the torpid and relaxed state of the colon, favouring the formation of accumulations in its cavity. When, however, these accumulations are formed, and more particularly when they occasion any pressure upon the gall-bladder, the liver, or their ducts, and especially if they press at the same time upon the duodenum and stomach, or impede the functions of these viscera, the disturbance of the economy becomes more marked, and assumes the form of serious disease. In this manner, we conceive, various dyspeptic disorders arise, and put on an acute character, not infrequently being accompanied with slight jaundice, or terminating in this state, owing to the obstruction placed in the way of the flow of bile into the duodenum, as well as to the absorption of the biliary and other secretions during the retention of them in the bowels.

The distensions of the cæcum and colon, whether resulting from the generation of flatus, or from fæcal collections, or, as is most usually the case, from both, when carried to a great height, not only impede the functions of the organs with which these viscera are generally in contact; but also, by displacing, to a certain extent, adjoining organs, disturb their operations, and occasion disorder even of more remote parts. When the abdomen is distended by inflation or fæcal accumulations in the colon, particularly if the transverse arch and superior flexures of the viscus are the seat of disorder, the stomach and liver are pushed against the diaphragm, the descent of this organ is impeded, the liver and stomach are thereby deranged in their operations, the cavity of the thorax is diminished in capacity, and hence proceed difficult circulation through the lungs, a quickened respiration and circulation, and not unusually a retardation of the return of blood from the head. In this manner we believe that various disorders, depending upon the condition of the heart's functions, are either originally produced or subsequently perpetuated; and we have certain proofs that the return of these ailments is very frequently promoted by the morbid condition of the bowels, now under consideration, acting most probably in the way now pointed out. And we further contend, not only that various functional disturbances of the heart are occasioned in this manner, but that the operations of the lungs themselves become also disordered, owing to the particular pathological state we have pointed out, in those who are disposed, either from hereditary conformation or previous disorder, to derangements of these organs.

The same observations may also be extended to the functions of the brain. It is obvious, if it be admitted that the return of blood from the head may be retarded in the way we have pointed out, or the circulation in this situation in any other way deranged, that disorder of the functions of the brain and nervous system will supervene, to an extent depending upon the degree to which the original cause is carried, and upon the peculiar constitution and predisposition of the patient. The irritation, also, which accumulations of morbid matters occasion in the *prima via* is sympathetically propagated to the brain, and hence the more frequent dependence of disorders of the

nervous system upon the condition of the alimentary canal. In this manner, we conceive, attacks of melancholia and hypochondriasis, and even mental alienation, supervene in many instances, as we have already contended; and the more usual forms of hysteria, epilepsy, chorea, paralysis, and even apoplexy, seem to be connected with, if not altogether dependant upon, the conditions of the large bowels which we have endeavoured to illustrate in the present chapter. The treatment of these diseases proves the accuracy of those views, inasmuch as it is notorious to every experienced observer, that a regular course of purgative medicines is indispensably necessary for their cure, that the alvine evacuations are generally morbid, and that recovery is seldom complete until they are restored to their healthy condition, whatever means may have been resorted to besides.

The necessity of employing, and the obviously great advantages of persisting in the use of, purgative remedies in all the complaints alluded to in the above remarks, are so well known, that we consider it a work of supererogation to illustrate the subject by the details of cases. We shall adduce, however, two or three cases of anomalous disorder, which evidently depended upon accumulations of faecal matters in the large bowels, owing to neglect of their functions, and which had resisted the treatment that had been founded on different views from those by which we were directed.

CASE CLXIX. — *Accumulations in the Cæcum and Colon, occasioning anomalous Symptoms.*

Mrs. ———, aged about 27, had long been subject to daily paroxysms of fever: her hands were dry and white, as if powder lodged in the pores of the skin; the nails so brittle as not only to break easily, but to chip off in small flakes in every part of them. She had constant heaviness and noise in the head, with extreme pain supervening occasionally at the back of the neck, also weakness of sight, and a morning sleep invariably threw her into profuse perspirations. For these complaints medical advice had frequently been resorted to, but without advantage. Towards autumn the disorder assumed an intermittent character, and in the second week of October, 1822, medical advice was again called in.

Her side was now submitted to the pressure of the hand, but as it was examined

only to the termination of the ribs, she felt but trifling inconvenience from the touch; between the false ribs, however, and the umbilicus, the pressure of the hand occasioned the most acute pain; and her medical attendants immediately pronounced her liver diseased. Morning perspirations continuing, she was ordered to rise as soon as she awoke from a first sleep, however early it might be. This was of little avail, and decoction of bark was administered, which checked the perspirations for a time, but affected the head, and occasioned so much pain in the throat and stomach, attended with a burning and smarting sensation, that she was obliged to discontinue it. These sensations she began to feel after taking the first draught; and the slightest exertion, even lifting a chair, or walking across the room, would produce such extreme dryness in the throat as frequently to compel her to take some fluid to enable her to speak.

She soon afterwards experienced increasing pain in the side and head; her spirits fluctuated, and sometimes became so depressed as to terminate in hysteric affections.

She was now quite unable to lie upon her right side, as the least pressure occasioned acute, pricking pain between the short ribs and the hip; and when lying upon the left side she had the sensation of heaviness and a dragging from the right; also, according to her own words, a pain down the middle of the body, from the chest to the umbilicus, as if the position in which she was placed had occasioned the liver to press upon the alimentary canal; she, therefore, invariably slept upon her back for many weeks. She also felt great difficulty in using her right arm, as the use of it produced heat and pain in the side and chest.

Still her appetite was tolerably good, but she frequently felt compelled to sleep after dinner, particularly if she dined late; and she always found herself more comfortable when she divided the day so as to have her meals (breakfast, dinner, and tea) at nearly equal distances of time.

In the beginning of February 1823, she stooped one day hastily to tie her shoe: this exertion soon proved to her how much the malady had increased. Acute pains succeeded, and in the night a violent attack of spasm. Some time after this she stooped suddenly to the right side, when she instantly suffered "most severe pain in the soft part of the body, between the ribs and hip, with the addition of feeling near the groin as if a horny substance were piercing the intestines; and spasms succeeded in the night, as before." She now every day felt increasing indisposition, weakness in the knees and ankles, a sensation of fulness in the right leg, with general debility; and the thumb of the right hand suddenly swelled, and became entirely useless.

The direction that the pains of which she complained now took was from "the throat to the abdomen, in a straight line, branching off from the chest, under the ribs, to the hip, where it divided and extended to the right side of the spine, at the *small* of the back, and round the hip to the right groin, where the pain was much more acute than in any other part; if I except a small part close to the spine, which was very painful when touched, although the hand extended across the back at that spot, by giving support, enabled me to hold myself perfectly erect, which, without this, I was unable to do." She also had some pain about the sigmoid flexure of the colon; but this was so slight that it was not much regarded.

Her bowels during the long period of her ailments were very irregular. They were generally costive, but sometimes irritated, the evacuations being frequent, yet scanty, and occasionally attended with some degree of tenesmus. She had taken purgatives, but without relief; and had previously suffered from hæmorrhoids and slight sense of scalding in the urethra. The catamenia had not been materially deranged.

The above are the most material particulars contained in a long history of her case, drawn up by herself at our request. On the first occasion of our seeing her, we examined carefully the abdomen, particularly over the cæcum and in the course of the colon; and we paid especial care to ascertain the existence of diseased liver. The region of the cæcum was unusually tumid, and very painful to the touch, with an inelastic hardness, extending in the course of the colon, under the right ribs, and across the epigastrium. Her countenance was dusky, and deficient in clearness. The tongue foul and the body emaciated. The cause of her ailments seemed to be perfectly evident; and we accordingly directed a pill, consisting of the blue-pill, with the aloes and myrrh pill, to be taken at bed-time every night; and a mixture of the compound infusions of senna and gentian, with the sulphate of magnesia and tincture of cardamoms, in the morning. These were continued daily, without intermission, excepting in as far as that calomel was combined with the aloes and myrrh every third or fourth night, for some time, until the morbid accumulations seemed to have been carried off. After a few days the evacuations became more copious and more morbid; and the quantity of disordered matters brought away astonished the patient. As these were removed, her health improved; the distressing symptoms gradually disappeared; and by continuing the pills and mixture, so as to procure at least two full evacuations daily, her recovery became complete.

CASE CLXX.—*Accumulations of Morbid Secretions, occasioning violent Spasmodic Affection.*

A YOUNG lady, who had been remarkably healthy for the first ten years of her life, began to lose flesh, without any visible cause. Her friends became uneasy; many physicians were consulted, and our opinion required. She was treated for worms by some, by others for affection of the mesenteric glands; but the child became worse, and in the progress of disease she was attacked with the most distressing spasms. When we saw her she was about 12 years of age, and the spasms seized her almost daily; her motions were irregular, sometimes free, and at other times very much the reverse; but they were supposed to be quite natural, except when she took medicines, when they sometimes exhibited a dark, morbid, and offensive appearance. No worms had been evacuated; great attention having been paid to whatever passed from her. On examining the abdomen we discovered that a very considerable fulness existed at the cæcum, and that the whole abdomen had a full, doughy feel, as if the bowels were filled with morbid secretions; there was not the elasticity of health. The tongue was foul and spotted; white, with little red spots. The appetite was good, and she ate freely. The spasms, which affected chiefly the chest and respiratory organs, came on suddenly, and sometimes when she was in the highest spirits. All these symptoms appeared to us to arise from morbid accumulations in the bowels, and probably from worms; and, therefore, we recommended a regular course of purgative medicine to be pursued without intermission. This was objected to, as she was supposed to have taken too much medicine, and, indeed, that it was from this cause the disease was produced. As we considered this view of the question entirely erroneous, we maintained the necessity of not only keeping up a decided laxative effect upon the bowels, but a continuance of it for months, as the only possible chance of removing her sufferings. Calomel, in six and eight grain doses, was given every night at bed-time, with an aperient draught in the morning, for six nights. The motions were extremely morbid, dark coloured, of clay consistence, and mixed with gritty matter. From these morbid motions having been increased in quantity, as the calomel and purgatives were repeated, the family were impressed with the conviction that the medicines taken were really increasing the disease; but as the spasmodic affection diminished in frequency and severity, as the accumulated matters were removed from the bowels, and as she was not at all weakened by the purgatives employed, but, on the contrary, strengthened, the purgative plan was continued for a month, occasionally intermitting the calomel, as this medicine was given entirely with a view of separating the viscid secretions

which lined the alimentary canal, and facilitating their removal by the purgative exhibited in the morning. After this time, calomel combined with scammony, occasionally with aloes and the blue-pill, ipecacuanha, &c. were given, always avoiding the effects of calomel on the salivary glands; and the aperient was continued every morning. This plan was regularly persisted in for several months, varying, of course, the prescription according to circumstances: and the mass of *heavy, clay-like matter*,—of a dark-blue at times, sometimes quite black, at other times brown and green, with a sediment of a dark colour, having the appearance of sand,—which was brought away, can scarcely be conceived, except by those who saw it; and as this matter came away the child improved.

This plan has now been continued for about two years; and although spasms occur once in six or seven months, the young lady is perfectly well. She grows, and is in good health and flesh. The abdomen is now perfectly elastic and natural, and the tumour at the cæcum entirely removed.

CASE CLXXI.—*Accumulations of Morbid Matters in the Cæcum and Colon, producing anomalous Nervous Symptoms, &c.*

MISS —, aged about 26 years, has complained for several years of a sense of fulness and uneasiness in the right iliac region, with distension in the abdomen, and oppression at the præcordia and epigastric region. She is also frequently subject to headach, to spasmodic affections, and slight attacks of convulsion, partaking neither of the character of epilepsy nor of hysteria; these latter generally supervening in heated or crowded rooms. The catamenia are regular, but in small quantity; the bowels are habitually costive, and generally require the assistance of opening medicines. She has frequently taken active cathartics, but has never felt any permanent advantage from them. Tongue white and loaded, with occasional nausea; pulse not materially affected; her sleep is generally disturbed.

May 17th, 1821.—Upon examining the right side in the situation of the cæcum, she complained of much tenderness to the touch, and there was very evident fulness and hardness. The blue-pill with aloes and myrrh was directed to be taken every night, and a draught consisting of infusion of senna with tartrate of potash and spirit. ammon. fœtid., early the following morning. These remedies were continued daily; a full dose of calomel being substituted for the pill every third or fourth night, and the compound decoction of aloes with the tincture of senna and jalap given instead of the foregoing draught in the morning. The purgatives were thus varied, and combined with antispasmodics and cardiacs, as the varying phenomena of the

disease required, but they were never omitted for a single day; care being taken to exhibit them in doses sufficient to procure four or five motions daily.

The alvine evacuations were at first offensive and tenacious, but by no means abundant. They became, however, in a few days more copious and morbid, of a dark brown and olive brown colour, and for several weeks continued to exhibit this appearance. After a few days the pain in the region of the cæcum became more acute, and a dozen of leeches, followed by hot poultices, were therefore applied. These removed the tenderness in this situation, and seemed to promote the operation of the purgatives. After this plan had been persisted in for upwards of two months, the tumidity of the abdomen, especially at the right side, had very materially subsided; the patient ceased to complain of oppression and anxiety at the præcordia and epigastrium; the nervous symptoms, which had been gradually diminishing, were not now complained of; and her health and strength had improved considerably.

Shortly after this period she removed out of town; and although recommended to continue the plan of treatment still longer, she neglected it, excepting in as far as to obviate costiveness. Several of the former symptoms returned some time afterwards, with distressing flatulency. The purgative plan of cure was again adopted, and this class of medicines was combined with carminatives and antispasmodics. These removed all the symptoms; but in the month of January of the following year she was seized with an attack of hepatitis, in consequence of being exposed to cold after coming out of an over-heated room. General and local blood-letting were now prescribed, with a continuance of the purgative remedies; these removed all disorder; after which laxatives were exhibited, so as to preserve a freely open state of the bowels. We have lately seen this lady, and know that she has continued to enjoy good health ever since.

The above cases seem to us sufficient for the purpose of drawing the particular attention of practitioners to the subject of accumulations of morbid matters in the large bowels. We might have adduced many more instances calculated to illustrate the nature and treatment of these ailments, if the scope and intention of the present work had permitted us, or if it had appeared necessary. To ourselves, a regard to this condition of the alimentary canal has always been of great importance, not only in its relation to the origin of various diseases, but also to a successful mode of combating them: and here we cannot omit expressing our obligations to the valuable writings of Mr. Abernethy, as having directed our attention particularly to this subject.

CHAPTER IV.

OF DYSENTERY, ITS FORMS AND CONSEQUENCES, IN WARM CLIMATES, PARTICULARLY IN INDIA.

IN the observations which we shall have to make on this very important and prevalent disease, we shall, first, consider it in its simpler or less complicated forms; we shall next treat of that variety which is characterised by attendant disorder of the liver; and afterwards offer some remarks on the chronic forms of the disease, and on the scorbutic dysentery which is occasionally met with in intertropical practice. Having disposed of these subjects, we shall afterwards inquire into the organic lesions or consequences which sometimes supervene to repeated attacks of the disease, or to neglected or injudiciously treated cases. In the remarks and illustrations which we shall offer under each of these heads, the advantage of having an early recourse to active treatment will be most apparent. The practitioner who is inexperienced in the diseases of warm climates should not be led astray by imaginary distinctions of subordinate varieties of dysentery, or by opinions respecting the non-inflammatory character of one form, or the highly inflammatory condition of another. The mildest and least inflammatory to appearance may rapidly terminate in extensive ulceration, before the practitioner becomes aware of any danger, if the mere acuteness or activity of the symptoms be solely relied upon. In all cases coming before him, he should endeavour to ascertain the probable predisposing and exciting causes of the disease, and the particular habits of, and circumstances connected with, the patient, as they will serve to throw considerable light upon the pathological condition of the disorder, and indicate the kind of means which should be resorted to, and the extent to which they should be carried. In all cases the practitioner must observe for himself, and, above all, think for himself, when he has observed enough to

enable him to do so with accuracy: until his mind is thus furnished, he must trust to the guides which have gone before him, and be led by those who have derived their information from Nature, in the diversified forms which she assumes, according to the numerous circumstances and agencies by which she is influenced.

SECTION I.

Of acute, uncomplicated Dysentery.

THE view we have endeavoured to exhibit of the functional disorders of the large bowels, which depend upon accumulations of morbid secretions and faecal matters in their cavity, shews in a very remarkable manner one of the very earliest pathological states which gives rise to the form of disease that we are now about to consider. Collections of excrementitious matters in these bowels, we have already stated, when treating of that subject, tend very directly and very evidently to irritate the mucous surface on which they lodge, and to induce inflammation, followed by ulceration and even sphacelation, in a very short period, if the disease be neglected or injudiciously treated. In some cases these consequences will sometimes supervene, notwithstanding the use of the most decided means of cure; but this is chiefly owing, on those occasions, to peculiarity of constitution, and to the causes and influences by which it has been affected.

In a great many cases, this form of dysentery is preceded by a constipated state of the bowels, often of long duration, especially among persons who have recently arrived in India. To this condition frequently supervenes mucous diarrhoea, attended with pains of the abdomen, coming on at intervals, and generally preceding the alvine evacuations. This form of diarrhoea may continue for two or three days, passing gradually into dysentery, with all the characteristic signs of the disease. In a few instances,

especially when the evacuations are copious, the diarrhœa subsides, and the patient recovers without experiencing, at least for that time, a true dysenteric attack. This result seems to arise from the irritation produced upon the mucous surface of the large bowels by the fæcal accumulations having subsided, in consequence of the irritating matters having been removed, and of the copious secretion which had taken place.

Frequently, the dysenteric symptoms are present from the first hour at which the patient complains, the stools being then scanty, mucous, streaked with blood, and attended with abdominal pain and tenesmus. In cases of this nature, the increased action of the muscular coats of the bowel, especially about the sigmoid flexure and rectum, prevents the passage of the fæcal collections through their canal, and, in many cases, occasions a complete obstruction, little passing away but the perfectly fluid secretions. In cases of this description, if the disease be not early subdued by very decided treatment, sloughing of the mucous coat often takes place, followed by involuntary motions, when the fæcal accumulations at last come away, such parts of them, at least, as have been dissolved being washed off by the watery secretions poured out from the irritated vessels of the inflamed surface.

Having thus indicated one of the most frequent sources whence the acute and uncomplicated form of intertropical dysentery seems to us to arise, and believing it essentially to be an inflammatory disease, whether proceeding from accumulations of morbid matters in the bowels, or supervening in consequence of the external causes of the disease having determined an increased action in the mucous surface of these viscera, independently of such accumulations; or whether resulting from those causes acting conjointly with the pathological states of the colon already insisted upon, as we consider to be very generally the case,—we cannot subscribe to the subdivision of the disease adopted by some writers, particularly by Mr. Bampfield, of whose opinions and experience we entertain generally a very high opinion.

We conceive that the subdivision of this form of dysentery adopted by Mr. Bampfield, is a refinement by no means warranted by the nature of the

disease, leading to no advantages in practice, but, on the contrary, calculated to mislead the inexperienced practitioner, and, in some cases, to divert his mind from the adoption of a decided means of cure, when decision may be most requisite. The *mild*, the *severe*, and the *inflammatory* varieties which he has marked out, are, in our opinion, nothing more than varying degrees of the same, or nearly similar, pathological states, proceeding from the extent to which inflammatory action may have supervened, from the susceptibility of the system to sympathise with the local disease, and from the peculiarity of individual constitution. There is no line of demarcation by which these varieties can be separated from each other in practice. The mild form may be, and indeed actually is, as much an inflammatory disease as that form which bears this designation, although the extent to which inflammatory action may have supervened is less, and its character, owing to the circumstances peculiar to the individual, less acute. The *severe* variety we likewise conceive to be essentially inflammatory, and differing only from the form on which Mr. Bampfield has imposed the term, as it were *par excellence*, in the phlogistic character of the patient's constitution—the extent to which inflammatory action may have supervened in the colon, cæcum, and rectum—and the febrile action, generally of a synochal form, induced throughout the system.

Viewing, therefore, the acute and uncomplicated form of dysentery, especially as observed in India, as an inflammatory disease, limited chiefly to the cæcum, colon, and rectum, and varying somewhat in its phenomena, according to the extent to which inflammatory action has supervened in one or in all these situations, we shall proceed to detail its history, in the various degrees of severity which it usually presents in practice amongst recent comers to India, in older residents, and amongst the natives themselves; keeping this circumstance, however, in view, that the disease is the same as to its nature, but differing merely in the degree of severity which, like all inflammatory diseases, it usually assumes.

Simple dysentery, in its least severe forms, generally commences with frequent calls to stool, the motions being scanty, mucous, gelatinous, streaked

with blood, and accompanied with pain and tenesmus. At first the pain seems chiefly limited to the rectum, occasional griping pains being only felt in the abdomen. The tongue is often but little affected, farther than being white and loaded; the pulse sometimes at the beginning not materially accelerated, but it generally soon becomes affected to an extent varying according to the habit of the patient and severity of the disease. If the disorder be not subdued in this early stage, all the symptoms become more acute; the pain in the abdomen increases in severity and is more constant, yet, in many cases, little or no pain is complained of, excepting at the time when the patient is passing a motion, although the stools are of the most morbid character, and the disease altogether of the most severe form. This, however, ought not to be imputed to the absence of inflammatory action; for the mucous surface of the cæcum, colon, and rectum, may be inflamed, and, indeed, in a state of ulceration, and yet but little uneasiness, even upon firm pressure of the abdomen, is apparently felt. This seems to be owing to the varying degree of excitability and sensibility with which the human frame is endowed, and, perhaps, to some modification in the condition of the diseased parts, beyond the detection of our unaided senses. Yet, in many cases, where pain is either entirely absent, or but little complained of, a sense of heat in the abdomen, especially in the course of the colon, is very generally felt. When this symptom is present, it ought always to be recognised as indicating the existence of inflammation of the mucous surface of the bowel. A similar inference ought also to be deduced from a sense of soreness in the abdomen. This symptom is very often present in all the stages of the disease, and always indicates great irritation of the mucous surface. It frequently accompanies the sensation of heat, or supervenes to that symptom. (See the case of Thomas Morgan, at the end of this section.)

As long as the disease is limited to the mucous lining of the large bowels, the patient seldom feels more than a sense of heat, or a dull aching pain, not increased on pressure, which he usually describes as being heavy, and shooting at times through the whole abdomen: but when the cæcum is minutely examined, pain, to a greater or less extent, is always felt, and, perhaps, some degree of fulness, even when pressure over the transverse arch of the colon occasions no

uneasiness. If the left side of the abdomen, beneath the ribs, be grasped in the hand, so as to embrace the descending colon and sigmoid flexure, pain is sometimes felt, but not always; but when the right side is similarly grasped, so as to press upon the cæcum in opposite directions, then pain is almost always complained of. If the practitioner takes the patient's report without further examination, in cases of this description, he will often be misled.

As the disease advances, the stools usually become still more frequent, the tenesmus more severe, the discharges of blood greater and often more intimately mixed with the matters evacuated, which gradually pass from a mucous, slimy, and gelatinous character, to a more watery appearance, of a dark colour, with a muddy solution of feculent matters, and sometimes with considerable discharges of fæces. The urine is now, and often early in the disease, of a high colour, voided frequently, and attended with scalding. Sometimes complete strangury is present: this is owing to the intimate connexion subsisting between the urinary organs and the seat of disorder. The tongue becomes more loaded and excited; the pulse more accelerated; and the skin harsh, hot, and dry. Tormina also, and the straining, increase; the calls to evacuation become more incessant, especially during the night, when the general febrile symptoms also are augmented.

When the straining and tenesmus are very urgent, we may then consider the rectum to be very remarkably inflamed: indeed, we know not of an instance where such a state was not evident when these symptoms were present. If tenesmus be very severe, in any particular instance, and if the patient presents but little abdominal fulness or tension,—if he complains but little of tormina, or of heat and soreness in the abdomen,—if he can bear pressure without uneasiness being produced about the region of the cæcum and sigmoid flexure of the colon,—we may then consider that disease is chiefly seated in the rectum, and that the large bowel is comparatively exempt, or at least much less affected than the rectum. But although this inference may be drawn, especially if there be little constitutional disturbance present, we ought not to depend upon it with certainty, and we should never allow it to seduce us into the adoption of weak measures of cure.

We have often seen the most extensive ulceration in the cæcum and colon, and yet the patient had not complained of tenesmus, the rectum having been comparatively sound. (See the case of Thomas Dunn, detailed at the end of this section.) And we have seen tenesmus to a great and distressing degree, the colon, throughout its extent, being, upon *post mortem* examination, found little disordered, and the disease confined to the rectum. From these circumstances, therefore, we have, during the latter years of our practice, especially when tenesmus has been urgent, considered it merely as characteristic of disease of the rectum, although frequently an attendant upon dysentery, and treated it accordingly, whether it arose at the commencement of the disease, or during the advanced stages.

When the disease affects the natives of India, the above symptoms are generally present, either alone or in conjunction with a frequent, small pulse, nausea, flatulency; sometimes vomiting of a porraceous or bilious character, and occasionally with a scybalous state of the motions. In them, the disease, although partaking of an inflammatory character, is generally less acute as respects the severity of its symptoms, usually exhausting sooner the powers of life; and hence it more frequently assumes a low or typhoid form, presenting, however, upon the examination of fatal cases, the same appearances as are observed in many European subjects.

In the more severe attacks of the simple, uncomplicated dysentery, to which recent comers to India are very liable, the local as well as the febrile symptoms are generally of a still more inflammatory character. This, however, is chiefly owing to the more phlogistic diathesis, more rigid fibres, and greater irritability of the persons affected. In them, the sense of heat or soreness, the tormina, fixed pain, tension, and tumefaction of the abdomen, are very urgent; the tenesmus distressing; the tongue white, loaded, excited, and dry; the stools mucous, gelatinous, and streaked with florid blood; the pulse hard, quick, or full; the skin hot and dry; the urinary functions much disordered, the urine being scanty, or severe strangury supervening, and the testes being drawn up close to the abdominal ring during the tormina. In these instances, the motions soon pass from a mucous or gelatinous state, with

streaks of florid blood, to watery, serous, or ichorous discharges, resembling the washings of raw beef, in which float patches of coagulable lymph, or even large shreds, thrown off from the acutely inflamed surface, with copious discharges of blood, mixed more or less intimately with the other matters evacuated from the bowels. Attending these severe attacks, flatulency, nausea, and vomiting of bilious matters, are often present, and continue throughout the disease in many of the fatal cases.

In the simple dysentery, the quantity of fluid matter discharged from the bowels varies very remarkably. In the less severe attacks, the evacuations may not be more than ten or twelve in the twenty-four hours, and these very scanty. As the disease is more acute, or increases in violence during its progress, the calls to stool are more frequent, from twenty, thirty, or forty efforts being made in the night and day; many of them without any further discharge than a small quantity of blood and mucus, and some of them more copious, consisting of watery or serous matters, with dissolved or broken-down fæces, slime, mucus, and blood; the quantity of fluid matters thus voided in the twenty-four hours being very great, and tending rapidly to exhaust and emaciate the system.

This watery state of the evacuations, especially when appearing early in the disease, is indicative of the lodgment of acrid matters in the bowels, requiring to be removed by purgatives at the commencement of the attack, or as early as the patient comes under treatment: but, in general, mucous stools are first voided in consequence of the irritation of acrid matters in the colon, and subsequently the watery discharges, the latter being the advanced effect of the same cause acting upon the irritated, inflamed, and, at last, ulcerated bowel.

In some cases, the disease seems to commence in the rectum; the patient for several days complaining of little more than severe straining, and of passing mucous stools, streaked with blood. If treated judiciously at this period, the complaint very frequently subsides in a comparatively short space of time; but if it be neglected, inflammatory action seems to extend first

to the sigmoid flexure of the colon, and successively along the interior surface of this bowel to the cæcum itself, as may be traced by the progress of the symptoms; the seat and extension of the pain, the tormina, the increased frequency of the calls to stool, the abdominal tension, and the attendant fever, being the chief indications of the extension of the disease.

When the simple dysentery commences in the colon, more especially if the whole of this viscus, with the cæcum and rectum, be nearly simultaneously affected, the symptoms which we have already enumerated are of remarkable severity, and the febrile action induced throughout the system proportionally great, particularly in those who have recently arrived in a warm climate, or who are of a plethoric habit and phlogistic diathesis.

In many cases, the simple, uncomplicated dysentery evidently commences in the mucous surface of the cæcum; the patient complaining from the beginning of disorder, or even before the stools have assumed the dysenteric character, of fixed pain, uneasiness, and fulness in the region of the cæcum. This is most remarkably the case when the disease supervenes to accumulations in the bowels, particularly in this viscus. In this class of cases, the progress of disease along the course of the colon, when the patient comes early for treatment, can readily be traced by the observing practitioner. To the soreness and pain complained of in the region of the cæcum, with foul tongue, frequent stools, of a watery, feculent, offensive, and otherwise morbid kind, rapidly supervenes pain in the right side, proceeding in the direction of the colon, with tormina, tension of the abdomen, and nausea, or even vomiting, followed by scanty, mucous, or watery evacuations, with slime and some dissolved or broken-down fæces. These are soon succeeded by straining, mucous, gelatinous, and bloody motions, increase of fever, with more frequent calls to stool, a fouler and more excited tongue, and aggravation of all the symptoms. In the more advanced stages, the tongue is dry, and sometimes encrusted with a brown fur; the thirst becomes urgent; the febrile symptoms greatly increased, particularly in the young and plethoric; and the soreness or pain of the abdomen more fixed, and the tormina more distressing.

Such is the most frequent progress of the simple acute dysentery, until it assumes the most unfavourable appearances in its far-advanced stage. But up to this period the symptoms vary very considerably, according to the nature and severity of the causes whence the disease proceeds; the state of system and habits of the individual; the presence of fæcal accumulations in the bowels; the age of the patient; the length of residence he has passed in a warm climate; and the extent to which the diseased action has proceeded in the alimentary canal, particularly in the large bowels, when he comes under treatment.

In those who have resided for a considerable time in India, or who are of a spare habit of body and phlegmatic temperament, the states of the pulse, of the skin, and tongue, often indicate but little constitutional disturbance early in the disease; whilst in the young, plethoric, and more recent comers, febrile symptoms are nearly coeval with the first appearance of the dysenteric affection of the bowels. At first, the thirst is moderate, but it generally increases during the progress of the disease, and is generally urgent when the fever is high.

When the disease is not severe, and the patient complains not of much nausea, the appetite is scarcely impaired. Indeed, in many cases, the inflammatory action of the mucous coat of the bowel has evidently proceeded to ulceration, and yet the appetite has not been much diminished. When, however, the stomach can receive food, or stimulating matters of any kind, the large bowels are immediately excited to increased action, and the patient has often an immediate call to stool. The state of the tongue is also various in different cases, evidently owing to the extent to which the rest of the alimentary canal sympathises with the seat of disease, and the degree of disorder existing in the hepatic functions. In the form of dysentery attended with disease of the liver, which we shall have to discuss in the sequel, the tongue is always remarkably affected; but in the uncomplicated disease now under consideration, it is not so much disordered, being generally, however, white, loaded, and excited, in the early stages of the malady, but becoming dry, encrusted in the centre with a dark fur, and red at the

point and edges, as the disease increases in severity, and advances to its last and most dangerous stage. When the biliary secretion is free and copious, the tongue, towards the root and centre, is generally coated with a yellowish fur; and if this secretion be retained in the gall-bladder or alimentary canal, it is generally encrusted with a brown coating in the same situations.

The state of the abdomen is also very different in different cases. In some, tension, with fulness, proceeding generally from fæcal accumulations, and flatus generated in the bowels, is much complained of; in others, the abdomen is apparently of its natural size. In many cases, particularly in the young and plethoric, much soreness or pain is felt in the abdomen, fixed more particularly in one place, generally in the situation of the cæcum, or in the hypogastric region, with tormina preceding each alvine discharge, from the commencement of the disease. In some instances, the pain can be traced, in the direction of the colon, from the cæcum to the sigmoid flexure; whilst in others, the patient admits the existence of little or no pain, or even soreness, and bears firm pressure on the abdomen without evincing any uneasiness; and yet, upon examination after death, the morbid appearances will be as acute and as extensive, in respect of the inner surface of the bowel at least, as in those cases where the greatest pain was complained of; the only difference being in the more complete limitation of the disease to the mucous surface, in those cases wherein no pain or remarkable uneasiness was felt.

We have generally remarked, that when the patient has complained much of abdominal fulness, pain, and tenderness of the abdomen to the touch, with great irritability of the stomach, the inflammatory action had extended to the omentum; and that not only this part, but also the peritoneal surface of the colon, had become inflamed, and adhesions taken place between it and adjoining parts. We have often observed also, in cases of this description, a preternatural heat of the abdomen, either in conjunction with these signs, or previous to their supervention.

The tormina and tenesmus also vary in severity. In some cases, neither the one nor the other is very prominently present; but in all the more severe

instances of the disease, they constitute the most distressing symptoms. The tormina evidently depend upon the extent to which the disorder affects the muscular coats of the large bowels, and induces irregular and spasmodic action of their fibres, with altered sensibility of the nerves supplying them. The tenesmus evidently proceeds from the irritation of the morbid matters passing along the excoriated, inflamed, and afterwards ulcerated rectum, occasioning a burning sensation in this viscus, and exciting a spasmodic action of the sphincter ani and circular fibres of the bowel, precluding the discharge of the retained matters, and opposing the violent action of the parts above. When this symptom is present, either dysuria or complete stranguria is frequently also complained of.

The tormina and tenesmus are very much increased, if they be not in some cases induced, conjointly with the operation of other causes, by the flow of acrid, green, inspissated bile from the liver and gall-bladder, especially when accumulations of this secretion have been suddenly poured into the alimentary canal. This is, however, more remarkably the case in the hepatic variety of dysentery, which we shall have to consider in the sequel. But in many cases of the simple dysentery, the more than usual flow of bile, or even a slight vitiation of this fluid, aggravates in a very marked manner the painful symptoms, and increases the calls to stool. The more copious discharge of bile into the bowels is also promoted by the purgatives necessarily exhibited in the course of the disease, and by the vomitings which occasionally supervene.

Besides the appearances of the stools already pointed out, there are others which are less constant, and which deserve notice. The evacuations are sometimes of a singularly variegated hue, consisting of a glairy mucus, mixed with a greenish, gelatinous substance, sometimes with pure bile, at other times with a muco-purulent matter, with large pieces of albuminous-like concretions formed upon the internal surface of the bowel and afterwards detached, and either with streaks of fluid blood, or with dark coagula, more or less intimately mixed with the other matters discharged. Blood is occasionally evacuated in very large quantities, fluid, and distinct from the other matters composing the evacuation: it then flows from the lower parts of the

large bowels. When consisting of coagula, and of dark, grumous clots intimately mixed with the discharges, we may consider it as having proceeded from the upper parts of the colon, or from the cæcum itself. The discharge of pure blood sometimes takes place early in the disease, and continues to its termination in death, (see James's case); but this intestinal hæmorrhage is seldom of a florid hue: it most frequently presents the venous character, and occasionally a dark-brown, muddy appearance, mixed intimately with watery, feculent, and offensive dejections. The copious sanguineous discharge may or may not proceed from an ulcerated surface. We believe that it most frequently exudes from the irritated mucous surface, and that the latter description of discharge is characteristic of ulceration, and occurs most frequently in persons who have neglected the state of their bowels, or who have indulged in the intoxicating liquors of India, which are so destructive to soldiers.

Occasionally considerable quantities of broken-down or semi-dissolved fæces are mixed up with the evacuations described above; but solid fæces, or scybala, are seldom remarked in the dysentery of India, although they sometimes occur. This is owing, in our opinion, to the liquefaction of the retained fæces by the serous fluid exhaled from the irritated and inflamed surfaces with which they are in contact, the accumulated matters forming the fæcal mass being thus washed away by the copious discharge proceeding from the internal surface of the diseased bowels, and, as it were, squeezed, in a liquid form, through the spasmodically constricted canal.

The evacuations early in the disease are sometimes very offensive; at other times, and indeed most frequently, they are not very manifestly so. They are occasionally highly bilious, presenting a dark-green, or bright-green and gelatinous hue: they are often greenish-brown, and contain clots of slightly inspissated bile. When the motions present these appearances, the tormina and tenesmus are often urgent, and the patient complains of scalding at the anus, of dysuria or stranguria, and of excoriations about the anus, and not infrequently of very troublesome and extensive *prociencia ani*. As the malady increases, the alvine dejections frequently become very

fetid and offensive; and occasionally have a raw, cadaverous odour towards the latter stages of the most unfavourable cases. This is more remarkably the case when the mucous surface of parts of the bowel is detached from the subjacent tissue, owing to the extension of the inflammatory action to the adjoining coats of the bowel. When such extension takes place in the advanced stage of the most severe cases, as it often does, large pieces of organised membrane are seen in the stools; and we have even observed them hanging from the rectum,—efforts to remove them occasioning a remarkable increase of suffering. The inexperienced practitioner should not, however, consider every membranous-like substance observed in the alvine evacuations as being a portion of the mucous coat of the bowel. These substances are most frequently exudations of coagulated lymph thrown out upon the inflamed surface, having assumed in some cases the form of the parts on which they had been moulded, and afterwards detached in the progress of the disease.

When portions of the mucous surface are actually detached, they are generally of considerable size, and present a sloughy appearance, quite different from the albuminous exudations which are more frequently observed in the dysenteric evacuations, and which are commonly remarked at a more early period of the disease,—sloughing of the villous coat taking place at a later stage. When dysentery has advanced to its most unfavourable period, the motions are occasionally streaked with a purulent-like sanies, or with an opaque, whitish-gray matter, evidently proceeding from the ulcerations in the mucous coat of the bowel. Towards the close of the disease, the evacuations are involuntary, owing to the exhausted or paralytic state of the sphincter ani; and the anus and parts adjoining become livid, relaxed, and widely open.

When the disease commences with much febrile action, the pulse, which at first was full and strong, becomes, generally in the space of two or three days, small and soft, the accompanying fever passing from an inflammatory to a typhoid type, with great depression of the spirits. This is most frequently observed, and takes place rapidly, in the natives of India, and in those who

have been debilitated by a long residence in the country; and seems to be owing to the exhaustion necessarily arising from the frequent fluid evacuations, from the severity of the tormina, the want of rest, the febrile irritation of the system, and rarely from the quantity of blood discharged through the early stages of the malady. When this low or typhoid form of disease is present, the surface of the body often seems shrunk, the superficial veins deprived of blood, and the skin, particularly of the extremities, frequently moistened with a cold colliquative sweat.

In some cases of the simple acute dysentery the skin becomes slightly jaundiced, or assumes a sallow or dusky hue; and this appearance may be independent of any actual disease about the biliary apparatus, arising entirely, in this form of dysentery, from the absorption of the bile, and fluid excrementitious matters lodged and retained in the alimentary canal.

During the progress of the more severe cases, the patient often complains of pains darting through various parts of the body, and is not infrequently affected with spasms of the muscles of the lower extremities, with irregular contractions of various voluntary muscles, with syncope or leipothymia when assuming the erect posture, imperfect vision, stupor, and other nervous symptoms, depending upon the intimate connexion subsisting between the bowels and other parts of the body.

The inexperienced practitioner should remember, that the mildest attack of the disease may become suddenly aggravated; and that exhaustion of the energies of the system may rapidly supervene, even when least expected; frequently in consequence of the extension of the disease along the mucous surface of the bowels, or through their external coats to adjoining parts, and of the severity of the accompanying fever. Sometimes the inflammatory action in the internal surface runs very rapidly into ulceration, or even sphacelation, through the greater part or even the whole extent of the colon, producing great sinking of the powers of life; a fetid exhalation or a putrid cadaverous smell issuing from the body for two or three days previous to dissolution.

When vascular depletions are prescribed early in the disease, the loss of blood by stool is seldom great. It is chiefly in cases which have not been treated by sufficiently early depletion, or where it has been entirely omitted, and in those patients who have allowed the disease to proceed for several days before submitting themselves to treatment, that considerable hæmorrhage is observed in the evacuations. Such hæmorrhage tends much more to exhaust the system than blood-letting; and the fact of the latter tending to diminish the former, whilst it subdues the disease, should be remembered by the practitioner.

In those cases in which the treatment has failed of arresting the progress of disease, or which have been neglected at a time when medical assistance might have been serviceable, various symptoms supervene, in addition to those already stated, owing to the extension of disorder to the more external coats of the large bowels, to the omentum and other important parts. The patient complains, especially towards the fatal close of the malady, of great increase of pain, distressing anxiety, restlessness, inability to sleep, frequent vomiting, and copious discharges *per anum* of morbid secretions and fæcal matter, which had been retained whilst the spasmodic action of the muscular coats of the bowels remained in full force. To these are soon added hiccup, cold sweats, a cadaverous odour exhaled from the body, cold extremities, sunk countenance, delirium, floccitation, jactitation, remarkable smallness and sinking of the pulse, insensibility, and death.

The disease, as now described, may run its course in three, four, or five days, or it may continue as many weeks. When it lasts as long as the latter period, it is chiefly owing to its having assumed a sub-acute form at the commencement, or to a partial reduction of its violence by treatment. If left to its course, it generally terminates fatally in a few days.

Having thus attempted to describe the usual progress of the disease, with the modifications which it most frequently presents, we shall next point out, in a few words, the symptoms indicating the different *terminations* to which it is subject, in order to enable the inexperienced practitioner to form an accurate PROGNOSIS of its issue.

When the symptoms are mild, or when severe, if they yield under treatment, then a *favourable termination* may be looked for, especially if the stools become less frequent, but more copious and feculent, and otherwise more natural; if the abdominal pain and the tormina preceding them disappear, or are less severe; if the tenesmus abates; if the frequency of the calls to stool, particularly in the night, diminishes, and the patient enjoys some repose; and if the general febrile and painful symptoms are alleviated.

If, *on the other hand*, the above signs become aggravated in severity, or even if we make no advance upon disease; if the frequent watery discharges and loss of blood from the bowels seem to sink the powers of life; if nervous symptoms, such as cramps in the lower extremities, leipothymia, subsultus tendinum, catchings, floccitation, irregular action of the voluntary muscles, stupor, hiccup, delirium, &c. supervene; if the surface of the body is shrunk, cold, or covered with colliquative sweats; if the countenance becomes Hippocratic and anxious, and the extremities cold; if the pain in the abdomen increases rapidly and becomes fixed, with great fulness, preternatural heat, and tenderness to the touch; if paralysis of the sphincter ani takes place, or paralysis of more distant parts, as of the tongue, muscles of the face, &c.; if loss of sight or of hearing is observed; if the evacuations become grumous, mixed with small dark coagula and light muco-purulent streaks, and particularly if they contain sphacelated portions of the villous coat of the bowel; if the stomach is so irritable as to reject whatever is taken; if complete strangury or suppression of urine is remarked; and, in short, if any of the symptoms already mentioned in our history of the disease as characterising its fatal close supervenes, we may consider that the vascular disorder of the vessels of the large bowels has produced that extent of structural change, which, with the sympathetic disorder taking place in other organs, is almost beyond the reach of art, and which, with but few exceptions, will soon destroy life.

When *gangrene* supervenes, as a termination of the most severe cases of dysentery, it is not often complete, the internal surface only of a part of the bowel being sphacelated, and detached from the adjoining parts, or

hanging loose in the canal; whilst the external coats are somewhat altered in colour, much softened, and readily torn, as in some of the cases about to be detailed. This state may be with greater justice called partial sphacelation of the bowel, than that of complete gangrene, which is seldom remarked when the dissection takes place within two or three hours after death; but which is not infrequently observed when the examination of the body is delayed even for a few hours.

The symptoms indicating the supervention of this termination are the phenomena just now detailed, followed by leipothymia, hiccup, a sudden remission of the tormina and abdominal pain; cold, shrunk, and bedewed countenance and extremities; sense of coldness in the abdomen; involuntary motions; lividity of the lips and cheeks; glassy state of the eyes; convulsions; great prostration of strength; cadaverous smell from the body; great fetor of the evacuations; and coma, or complete insensibility.

The simple acute dysentery may also terminate in a chronic form of disease, which we shall describe in the sequel; and it may induce disease of the liver or of the mesenteric glands. When, however, either of these affections supervenes to this form of dysentery, a most chronic and obstinate complication is the result, as we shall have to shew hereafter.

Ulceration may take place early in the disease, even in its mildest forms, in appearance, without betraying any decided indication of its presence. Most frequently, however, the symptoms become aggravated: the stools are generally changed from a slimy, gelatinous state, with distinct streaks of blood, to a serous, muddy, and grumous condition. The blood in the evacuations is of a darker colour, and often mixed either with an ichorous sanies or with purulent-like streaks. The stools are often also of a muddy, dark brown, and watery appearance, having the odour and appearance of the washings of raw meat. When, however, the ulceration is low down in the colon, or in the rectum, the blood discharged is often distinct from the rest of the motion, and of a less dark colour. In many cases wherein the mucous surface of the bowel only is inflamed, ulceration may proceed without being

suspected by the practitioner, especially during its earlier stages. As it advances, however, through the coats of the bowel, the patient generally complains of pain in the course of the colon, even although he may have felt none previously. When the blood is observed in the evacuations in very large quantity, unmixed with the rest of the dejection, and not in numerous streaks, we should suspect the existence of one or more large ulcerations low in the canal. But if the mucous, gelatinous, or slimy stools are merely streaked with blood, we should consider this appearance as an exudation of this fluid from the inflamed or excoriated capillaries supplying the mucous surface, without any sensible rupture or solution of continuity in the part affected.

Before we proceed to discuss the other forms of dysentery, the appearances observed on dissection, and the causes of the disease, we shall detail some cases illustrative of the simple, uncomplicated dysentery which we have now described.

CASE CLXXII.—*Acutely inflammatory Dysentery, from pernicious Liquors, speedily fatal.*
(See Plate XXXII.)

Camp Kurnool, 22d October.—In the evening, admitted Thomas James, aged 22, recruit, arrived from England in July; had been drinking hard of the pernicious liquors sold in the bazar.

Vespere.—Tongue white; he passes blood by stool; and complains of pain of the bowels.—*Adhibeantur abdomini hirudines xvijj. Habeat hydrarg. submur. gr. xx.*

23d.—The leeches drew well; abdomen somewhat tumid; tongue white, moist; stools feculent, mixed with blood; considerable griping this morning; general pain on pressure, particularly about the umbilicus.—*Applicetur ad umbilicum emplastrum lyttæ. Habeat olei ricini, ℥ij. Injiciatur enema purgans.*

Vespere.—Pulse frequent; skin hot; tongue foul; stools crude, green, mixed with blood; he thinks himself better.—*Habeat hydrarg. submur. gr. xx. Mist. salin. ℥ij. tertiâ quâque horâ.*

24th.—Pulse natural; tongue white, dry; stools feculent, very mucous, dark green, mixed with frothy blood; great tenesmus.—*Cont. mist. salin. Habeat pulv. purg. stat. Injiciatur enema purgans.*

Vespere.—Stools consist of blood and a very small quantity of feculent matter.—
Adhibeantur abdomini hirudines xvij. Habeat hydrarg. submur. gr. xx. Enema anodyn.

25th.—The medicine operated well; pulse 108; no fulness or tension of the belly; tongue cleaner; stools mucous, very bloody, of a dark colour; great tenesmus; pain about the anus; considerable debility.—*Injiciatur enema cum ipecacuanhâ et opio tertiâ quâque horâ. Capiat pulv. purgan. statim. Habeat pro alimento sago cum lacte.*

Vespere.—Pulse quick, and somewhat indistinct; stools still bloody, with some fæces; he is quite easy.—*Cont. enema cum ipecacuanhâ vespere maneque. Habeat hydrarg. submur. gr. xx. horâ somni.*

26th.—Pulse small and frequent; tongue white and dry; no appetite; no thirst; stools consist of pure blood, with a small quantity of fæces beneath; considerable drowsiness.—*Injiciatur enema cum ipecacuanhâ ter in die. R Tinct. opii, m̄xl.; spirit. æther. nitros. 3ij.; aquæ puræ, 3j. Ft. haust. stat. sumend. R Tinct. opii, 3ss.; acid. nitros. 3ij.; aquæ puræ, lbij. Ft. haust. cujus cyathum singulis horis bibat.*

Vespere.—Pulse gone; face covered with a profuse sweat; features shrunk; great anxiety; no pain; mental faculties impaired.—*Omit. med. omnia.*

27th.—He expired this morning at six o'clock.

Examination four hours after Death.—The liver did not seem to be diseased, but it was somewhat paler than usual. The gall-bladder was full, and was also of a pale colour. The stomach was much inflated, but not inflamed externally. Its internal surface was lined with a considerable quantity of mucus; its texture was found to be preternaturally thickened; and a general reddish tint, like that of an inflamed part, was observable. About the cardiac extremity there were several red spots. The omentum covered the small intestines, which were much inflated, and its lower part adhered to the surface of the bowels and the rim of the pelvis: it was slightly inflamed. On removing the omentum, the small intestines were, externally, perfectly natural; but internally, the ilium was slightly inflamed. The whole of the mucous surface of the colon was thickly studded with ulcerations in their earlier stages, and was of a brilliant red colour throughout its whole course. The rectum was similarly inflamed and ulcerated. (See Plate XXXII.)

Remarks.—This case furnishes an example of dysentery in its most acutely inflammatory form, as occurring in a recent comer to the country, and as supervening to the noxious intoxicating liquors usually sold in the bazars. Its rapid progress

indicates the celerity with which ulceration frequently supervenes, notwithstanding the employment of active depletion, which, however, ought never to be omitted in the early stages of the malady. This examination presents the lesions of the colon in as early a stage as we generally have an opportunity of observing them. Although the colon and rectum were the chief seats of the disease, it will be observed that the mucous surface of the stomach was also slightly inflamed in parts, and that of the lower part of the ilium.

CASE CLXXIII. — *Acute, uncomplicated Dysentery, with Scybala and blackish and ulcerated State of the Mucous Surface of the Large Bowels.* — (See Plates XXXI. and XL. fig. 2.)

WILLIAM WHITE, aged 24, a recruit, just arrived from England, admitted early this morning, 6th July, 1816. He complains of pain in the belly; no purging; skin cool; tongue white; pulse hard and full. — *Adhibeantur parti abdominis dolenti hirudines xvj. Habeat hydrarg. submur. gr. xij. stat.*

7th. — The belly is easier; complains of considerable debility. — *Habeat pulv. purg.*

Vespere. — Pulse frequent, hard; tongue furred, dry; stools green, tenacious, mixed with mucus and some blood; great tenesmus. — *Habeat hydrarg. submur. gr. xij. stat. Injiciatur enema emolliens. Adhibeantur ossi sacro hirudines xij.*

8th. — Pulse small, frequent; tongue rather furred and dry; saliva viscid; great nausea; stools crude, green, feculent; pain felt across the belly; irritation about the anus diminished. — *Habeat haust. emet.*

Vespere. — He vomited much greenish matter, and has been very easy since; stools feculent, mixed with a little blood; pain of the belly continues. — *Habeat hydrarg. submur. gr. xij. Injiciatur enema purg. Adhibeantur abdomini hirudines xvj.*

9th. — The leeches drew very freely; the pain of the belly is rather less; pulse very small; skin cold; tongue furred, dry; nausea; stools bloody, and mixed with some fæces; tenesmus; he feels very weak this morning; the pain seems to be confined to the transverse arch of the colon; no fulness or tension of the belly. — *Habeat medicaminis Cheltenham water nominati, ℥j. Injiciatur enema ipecac. cum opio. Adhibeatur parti abdominis dolenti emplastrum lyttæ. Habeat pro alimento sago et vinum.*

Vespere. — He vomited the Cheltenham water immediately, and a cathartic powder was administered; the blistered surface has risen well, but he was sleepless during the night; pulse tremulous, very small; skin cold, with a cold sweat; tongue still furred, moist; stools dark-brown, very fetid; he thinks the pain diminished; great debility. —

R Tinct. camph. comp. ℥ss.; aquæ ammoniæ, ℥xx.; aquæ puræ, ℥ij. Fiat haustus, horâ somni sumendus. Habeat vini tepidi cyathum statim; necnon pro cœnâ sago et vinum.

10th. — He took sago and wine with appetite; pulse still small, but somewhat improved; skin cold; tongue cleaner, but still furred and rather dry; two stools; he thinks himself rather better; he was much harassed in the night with singultus. — Adhibeatur scrobiculo cordis emplastrum lyttæ. R Tinct. camph. comp. ℥iij.; aquæ ammoniæ, spirit. æther. sulph. āā ℥xx.; aquæ puræ, ℥ij. Fiat haust. stat. sumend. R Mist. camph. ℥bj.; spirit. æther. nitros. ℥ij.; aquæ ammoniæ, ℥iij. Fiat mist. cujus ℥j. secundâ quâque horâ capiat. Habeat tincturæ rhæi, ℥j. meridie. R Hydrarg. submur. gr. xv.; confect. aromatic. q. s. Fiant pilul. iij. post meridiem horâ sumend.

Vespere. — Pulse hardly to be felt; skin very cold, and covered with a clammy sweat; singultus incessant; the body exhales a cadaverous smell. — Repet. pilul. hydrarg. submur. Habeat vini tepidi cyathum singulis horis. R Tinct. opii, ℥l.; aquæ ammoniæ, ℥x.; aquæ puræ, ℥ij. Fiat haust. stat. sumend.

11th. — Bottles filled with warm water were applied to the side and feet; warm wine and aromatics were exhibited every half hour, from six o'clock; but nothing could restore heat to the extremities. He died about three o'clock, A.M.

Examination, four hours after Death. — The liver was of a dark-blue colour externally, with one or two light-brown spots, but was of a healthy structure. The gall-bladder was distended with inspissated black bile. There was no obstruction in the ducts; but no bile had evidently passed into the duodenum, as it was with difficulty it could be made to pass through the ducts by pressure. The omentum was wrapped firmly round the colon. The stomach was perfectly healthy, but was much distended with air, and filled with a green, watery fluid, mixed with mucus. The small intestines were full of pultaceous matter, of a green colour, and precisely similar to that which was passed by stool during the first two days of his illness. There was a slight degree of external inflammation observable over the whole of the small intestines. No material alteration was to be found in the coats of the duodenum and jejunum, but the ilium was much thickened, and its internal surface ulcerated, and of a dark reddish-brown colour where it terminated in the cæcum. The valvulæ conniventes were larger than usual, but appeared to be perfectly healthy. The colon externally was of a yellowish-green colour, with large dark-red spots on the sides of its cells, which were distended and prominent, dipping between the intermediate contractions or folds. From the colon to the rectum, each cell and fold presented a dark-red patch, as represented in Plate XXXI. fig. 1. The distension of

the cells and the deepness of the folds between them gave the bowel a lobulated appearance, and was evidently such as to prevent the discharge of the more solid fæces contained in the cells. The cæcum and colon were laid open. The former part contained two or three large ulcers, rising prominently above the surrounding surface, with very dark and thickened sides and depressed centres, which were paler than the surrounding edges, and sloughy. The transverse folds of the colon were thickened and ulcerated throughout. In the rectum there was one large ulcer of the size of a bean, with elevated edges, detached from the subjacent tissue, and filled with slough. The internal surface of the cæcum, colon, and rectum, was of a deep-black colour, intermixed with dark-red spots, which gradually passed at their edges into an intermixture of brick-red and black. (See Plate XXXI. fig. 2. and Plate XL. fig. 2.) About the sigmoid flexure and towards the rectum were lighter streaks and singular ulcerations, of a lighter shade, and terminating in an abrupt manner, resembling fissures of the mucous coat. (See Plate XL. fig. 2.) The cæcum and cells of the colon were filled with a dark-green mucus and hard scybala of a still darker colour. The coats of the bowel were not sphacelated, but they were friable, and tore with little difficulty.

Remarks.—This man was only in the hospital about four days; but, from appearances, the disease must have been of much longer duration. The symptoms were at first evidently inflammatory; and the most active measures were adopted to subdue them; but the time had evidently gone by at which the disease could have been successfully treated. Forty-four leeches were applied during the first two days after admission; and allowing an ounce and a quarter of blood to have been abstracted by each, fifty-five ounces must have been drawn. Blisters, calomel, and other strong purgatives, were given with little effect. Cold, clammy sweats became frequent. On the 9th the pulse began to falter. He did not complain of pain; but from that time he became continually worse. The most nourishing aliment was administered, and every means of restoring heat to the body employed; but all proved equally ineffectual. The cold sweats and fluttering pulse might be attributed to the change going on in the large intestines, which terminated in so deep and unusual an ulceration, with the singular appearances described. This case is important, as demonstrating the impossibility, in many instances, of hardened fæces escaping from the cells of the colon, unless they are dissolved in the fluid discharge surrounding them, owing to the deep folds in which the colon is drawn during the acute stage of disease. The very dark colour, which was remarkable, of the internal surface of the large bowel, is very difficult to be explained.

CASE CLXXIV.— *Very acute Dysentery, from feculent Accumulations, without Tenesmus, &c.*

THOMAS DUNN, ætat. 25, admitted early in the morning, 19th November, 1815. Complains of considerable pain in the bowels; dejections dark green, feculent.—Habeat haust. purg. cum sulph. sodæ et infus. sennæ stat.

Evening.—Evacuations crude, offensive.—R Calomel. gr. xij. h. s. s.

20th.—Dejections green, viscid, with some blood; vomited matter of the appearance of bile this morning; complains of soreness in the belly, of which there is considerable fulness and tension, with pain on pressure.—Repet. haust. ut suprâ præscript. Injiciatur enema emolliens. Appl. hirudines xx. circa abdom.

Evening.—Pain of the belly relieved by the leeches; pulse 120, full; dejections watery and bloody.—Repet. enema. Mist. salin. febrif. cum spirit. æther. nitros. tertiâ quâque horâ.

21st.—Pulse 84; tongue moist, clean; dejections unaltered; the pain in the belly quite gone; complains of great soreness over the pubes; makes water less freely than usual.—Foment the belly. Haust. olei ricin. ℥ij. Repet. enema.

Evening.—Dejections liquid and feculent, with bloody water; urine voided more easily; pubes less painful on pressure; there is a degree of hardness in the right hypochondrium, pressure on which gives pain; pulse 96; tongue clean in the centre and furred on the edges; considerable thirst.—Tamarind water. Calomel. gr. x. h. s. s. Repet. enema. Foment the belly.

22d.—Dejections still watery, and mixed with blood, not unlike the washing of raw meat, evacuated without pain; urine voided freely and in great quantity; sweated much in the night; pulse 102; tongue clean, moist; thirst less urgent; appetite improved.—Olei ricini, ℥ij. Repet. enema. Fomentation.

Evening.—Dejections liquid, of a dark-brown colour, not bloody; pain alleviated; pulse frequent; tongue clean.—Repet. calomel. gr. x. Haust. anodyn.

23d.—Pulse very small, languid; skin covered with cold sweat; dejections very dark, not offensive or feculent; tongue moist, clean, except at the base, which is furred and black; belly tense and painful.—Repet. hirudines xiv. Enema. Olei ricin. ℥j.

Expired at eleven o'clock, A.M.

Examination, five hours after Death.—The liver was not materially enlarged, but appeared of a much paler colour, and its structure was somewhat softer than usual. The gall-bladder was full of thick, viscid, black bile. The stomach and the duodenum were perfectly natural. On the jejunum were slight marks of inflammation externally.

It was loaded with feculent matter of a dark-green colour, but there was no appearance of inflammation on the internal surface. The ilium was empty, lined with a dark-green coloured mucus, and free from inflammation. The internal surface of the colon exhibited one continued mass of disorganisation from the caput cæcum to the rectum, which was comparatively sound. In some parts, considerable ulcerations, and in others, hardness and thickness, were evident; and the canal contained a quantity of black, watery fluid, similar to what had been discharged by stool during the last two days, evidently the secretion of the diseased surface. The omentum adhered closely to the caput cæcum throughout its whole course, and was considerably thickened and diseased. There was a general adhesion of the colon to the stomach, spleen, and other adjacent parts. The heart was rather larger than usual, but did not exhibit any particular appearance of disease. The other viscera were perfectly natural.

Remarks.—This case is deserving of particular attention. The examination on dissection shews that purgatives were forcibly indicated. They were given freely in large doses for several days; yet it appears singular, that the only parts of the canal completely emptied of fæces were the colon and rectum, while the duodenum, and particularly the jejunum, were loaded with feculent matter. The medicines which were given seem to have had no power whatever on that part of the canal: whether this arose from any particular state of the part itself, or whether the medicines exhibited were destitute of the appropriate local action, becomes a question yet to be determined. From our subsequent knowledge of the operation of calomel on this part of the alimentary canal, we are inclined to think that a more liberal use of this medicine would have been advantageous in this case. When he first came to us, on the 17th, he brought his evacuations with him; and as they appeared perfectly feculent, but of a green colour, we thought a dose or two of purgative medicine might have relieved him. He took purgatives on that and the following day; his evacuations were of the same appearance as before. As he did not recover, he was received into the hospital on the 19th. The purgatives were repeated with good effect; his dejections were the same as formerly; but after the colon and rectum were completely emptied, they became watery and bloody. Tension and pain were felt over the whole abdomen, and were relieved by leeches. On the 21st he seemed better, but his dejections were gelatinous. We conceived, therefore, that there might be a lodgment of feculent matter somewhere in the intestinal tube; and that the watery evacuations, which were now without pain, might be the effect of the irritation occasioned by its acrid qualities. Injections and cathartics were continued accordingly. But from this period no fæces were evacuated. On the evening of the 22d his dejections became black, and continued so till his death. From these circumstances it would appear, that when the man came

under treatment a great quantity of feculent matter had been lodged in the large bowels, and had induced disease in them, which was rapidly followed by the lesions described above, notwithstanding that the morbid cause had been removed by the purgatives employed.

CASE CLXXV.—*Acute Dysentery, unusually great Contractions of the Colon, with Ulcerations.*—(See Plate XXXVI. figs. 1 and 2.)

Camp Kurnool.—Admitted 20th October, 1816, Thomas Cosgrove, recruit. Complains of violent pain in the belly; sickness at stomach; headach; tongue white, not foul, but shewing, in our opinion, considerable excitement in the system; pulse 86; skin cool and moist. He arrived in India in April last, and has enjoyed tolerable health till now; he appears a weakly lad, with a very delicate constitution. Admitted into hospital on the evening of the 20th October in camp, at Kurnool. We fear he has been drinking the noxious liquors of the camp.—Calomel. gr. xij. Enema purg.

21st.—Says he has less pain; very little sickness; was purged in the night; tongue foul, white. Habeat pulv. purg. Enema.

Vespere.—Stools watery, rather copious; bilious; feels considerable fulness and pain of the stomach; pulsations small, hard, thready, innumerable; tongue foul, with a bluish crust; no feverish heat of the skin.—Appl. hirudines xvj. parti affectæ. Calomel. gr. xx. h. s. s. Enema purg. ut antea.

22d.—The orifices made by the leeches bled a good deal in the night, and twenty ounces of blood were drawn by the leeches themselves; feels very weak in consequence; pain in the stomach and umbilicus abated; the fulness quite gone; tongue dry, rather loaded; pulse weak, and hardly perceptible.—Let him have a little arrow-root and wine immediately.

Eight o'Clock, A.M.—Has been fully purged; stools very bilious, granulated, with some white shreds like skin.—Olei ricini, ʒss. Tinct. opii, ℥xv. M. stat. sumend.

Vespere, Five o'Clock.—Stools excessively bilious; tongue loaded with a darkish crust; pulse quick and hurried; feels languor; great debility.—Calomel. gr. xx. h. s. s. R Mist. salin. febrif. ℔j.; vin. antim. ʒij.; spirit. æther. nitros. ʒij.; aq. ammon. ʒij. M. ft. mist. cujus capiat cyath. vin. secundâ quâque horâ. Enema anodyn. h. s.

23d.—Passed a very good night; was purged frequently, without pain or straining; pulse 98, rather fuller this morning; still very weak; has no pain of the belly; tongue cleaner, still covered with a brownish crust; stools the same as yesterday.—Repet. mist. salin. Repet. olei ricin. ut antea. Enema emolliens.

Vespere.—Skin warm, moist; pulse frequent, stronger; tongue foul, of a brown colour; very little pain of the belly; stools watery, brown in colour, with undigested vegetables.—Cont. mist. salin. Repet. calomel. gr. xx. Enema anodyn.

24th.—Stools this morning consist of dark-green mucus, with some feculent matter mixed with blood; pulse and skin the same as at last report; tongue cleaner; no pain.—Pulv. purg. Repet. enema emolliens. Cont. mist. salin.

Vespere.—Stools green and viscid, otherwise no alteration.—Cont. mist. salin. Calomel. gr. x. h. s. s.

25th.—Feels much better this morning; stools liquid, of a more natural appearance; tongue cleaner; pulse 98, much improved in strength and softness since yesterday; skin cool.—Repet. mist. salin. Repet. enema ut antea.

Vespere.—No material change.—Cont. med.

26th.—Tongue getting quite clean; pulse 100, small; stools liquid, feculent, mixed with blood; no pain in the belly; some straining, which is always relieved by the enema; the leech-wounds bled a good deal in the night.—Enema ipecac. Repet. mist. salin.

Vespere.—Stools bloody, with some feculent matter, and a portion of the bilious coat of the intestine, complete, and circular; pulse 108; tongue clammy, with a brown crust; skin moist, rather cool.—Enema anodyn. Repet. mist. salin. cum tinct. opii, $\mathfrak{m}\text{iv}$. add.

27th.—Thinks himself much better; evacuations fluid, of a pale-yellow colour, with a tinge of blood; tongue clean and moist; pulse 102, small and feeble; some appetite; complains of thirst.—Let him have acidulated drinks. Cont. mist. salin. Repet. enema ipecac. cum tinct. opii, $\mathfrak{3j}$. add. stat. et repet. vespere.

Vespere.—No blood in the stools, which are more natural in colour, but want consistence; no pain or fulness in the belly; pulse very small, frequent; tongue cleaner.—Cont. omnia. R Pulv. ipecac. gr. ij .; opii, gr. j .; syrup. q. s. Ft. pilul. h. s. s., et repet. ter in die.

28th.—Appears to become weaker daily; thinks himself better; does not complain of pain, but we are satisfied he does not tell all he suffers; pulse 108; stools smooth, of a pale-brown colour; no blood; appetite improved; less thirst; skin cool and moist.—Cont. med.

Vespere.—Feels unusual sickness at stomach in consequence of the pills; stools are more consistent, of a pale-straw colour; pulse frequent and fluttering; skin wet with perspiration, not cold or clammy; countenance expressive of pain; abdomen yields

considerably to pressure on the umbilicus, and he acknowledges that within the last half hour he has felt considerable pain there. — Appl. hirud. xij. circa umbil. Enema anodyn. stat. et repet. h. s. Omit. pilul. ipecac., et cont. mist. salin.

29th. — The pain in the belly much relieved by the leeches; tongue again furred, of a brown colour; pulse small, weak, frequent; skin cool and moist; sickness at stomach; some appetite. — Repet. enema. Cont. mist. salin.

Ten o'Clock, A.M. — Has passed two very large masses of coagulated blood, with a considerable portion of the villous coat of the intestine. — Repet. enema.

Vespere. — Skin warm, with a gentle moisture; tongue dry and furred; no pain in the belly; stools of a pale, bloody colour; no fæces nor straining. — Cont. ut antea.

30th. — Exceedingly weak this morning; pulse small, hardly to be felt; skin cold and clammy; stools of a deep-black colour, smooth, very offensive, with the appearance of dissolved fæces; is very drowsy; has no pain; countenance Hippocratic; there is no hope of his recovery. — *Vespere.* Sinking fast.

31st. — Passed a very indifferent night; complains of oppression in the chest, and difficulty of breathing; pulse 96, very small; he cannot express himself.

Vespere. — Pupils of the eye dilated; anxiety, exhaustion.

1st November. — Died this morning.

Examination after Death. — The small intestines were much contracted, and not larger in many parts than the intestines of a domestic fowl. The whole of the colon was in a state of great disease; and its transverse arch was so much contracted in parts, that its circumference measured only one inch. Externally it was of a pink hue, passing in places to a bluish pink. In one of the largest cells of the transverse arch was remarked a large ulcer, proceeding externally from the mucous surface, and presenting the appearance of the vaccine eruption. (See Plate XXXVI. fig. 1.) In the mucous surface of the cæcum and colon were sloughing ulcers, with elevated, thickened, and inflamed bases, and spots of dark, coagulated blood. The inner surface of the colon, particularly of the cæcum and sigmoid flexure, was very much inflamed. (See Plate XXXVI. fig. 2.) The rectum was in a similar state; but at the extremity, about four inches of the villous coat had sloughed and passed off by stool. The liver was paler than usual, but of a healthy structure.* The stomach

* A pale state of the liver is very usually observed in the simple acute dysentery of India, as we shall have to shew in the sequel, and seems to arise from the loss of blood from the intestinal canal during the disease.

was lined with thick, viscid mucus, full of a green-coloured fluid; and the cardia was sparsemi-nated with several spots of florid inflammation.

Remarks.—We have reason to believe that this man's disease was brought on by drinking *bogee*, a pernicious country beer sold in the bazar. We have, therefore, detailed the case faithfully from our hospital day-book, as a specimen of the dysentery which prevailed soon after our arrival at Kurnool from this cause, and of which four men died.

The diet which was allowed in this case was as follows, viz.—For breakfast, *sugee* (a kind of *porridge*) and milk, with tea, as his own inclinations pointed out; for dinner, chicken-broth or beef-tea, as circumstances rendered necessary; and for supper, sago with milk, or wine whenever it was thought prudent.

CASE CLXXVI.—*Acute Dysentery, Scybala, &c. &c.—Post Mortem Examination.*

PATRICK MARTIN, aged 23, admitted into hospital in the evening of the 25th May, 1817, at Hyderabad; says he has had purging for several days, and has taken several doses of medicine, but has never reported himself before; he has been drinking exceedingly hard of the intoxicating and destructive beverages of this country; tongue foul; skin dry and parched; some uneasiness of stomach.—R Calom. gr. xv.; opii puri, gr. jss.; syrup. q. s. Ft. pilul. h. s. s.

26th.—Motions scanty, and mixed with blood and mucus; tongue cleaner; no pain in his belly on pressure, but he is griped a good deal, and complains of thirst; pulse frequent.—Ol. ricini, ℥ij. stat.

Evening.—Tongue foul, and rather dry; stools bloody and watery; is thirsty; pulse frequent and hurried; strains very much; dull pain over the abdomen, not acute.—Apply thirty leeches on the belly. Calom. gr. xx.; opii, gr. ij. h. s. s. Mist. salin. febrif. every two or three hours.

27th.—Stools watery and bloody, not copious; no fæces; tongue clean and moist; no pain at all in his belly, but feels some uneasiness in ano; pulse hard and full, 104 in a minute.—V. S. ℥xxvj. Enema emol. stat. Ol. ricini, ℥jss. Rub in ℥j. unguent. mercur. over the abdomen.

Evening.—Feels much easier in every respect; has not so much straining, nor is there so much blood in his stools; tongue clean; pulse quick, and rather hurried; has no pain in the belly; the blood drawn is not at all cupped, nor has it any of the buff coat.—Repet. calom. gr. xx.; opii, gr. ij. Enema ipecac.

28th.—Pulse regular and strong, a firm beat as in health, 76 in a minute; no

fæces are passed; motions copious, watery and bloody, but not offensive; complains of straining, and has pain about the rectum, but none in the abdomen; tongue slightly covered with a coat of mucus; he has considerable thirst, but no appetite.—Apply twenty leeches along the os sacrum, and fomentations to the rectum. Pilul. hydrarg. cum ipecac. no. l. four times a day. Cont. frictio, enema, &c. ut antea. Ol. ricini, ℥j.

Evening.—Has not so much straining since the leeches were applied; motions consist of bloody water, mixed, for the first time, with something like fæces; in all other respects the same. — Cont. ut antea. Haust. anodyn. h. s. s.

29th.—Passed a great deal of bloody water in his motions during the night; those which have been passed this morning are more consistent than we have yet seen them, but still mixed with blood; much troubled with flatus; pain at the rectum and straining quite removed; tongue foul, but moist; pulse soft; has frequent sickness, and vomits occasionally. — Cont. pilul. et ol. ricini.

Evening.—Pulse rather oppressed, 100 in a minute; has been purged, and has passed hard lumps of fæces or scybala, with some bloody water, but less than last night; no straining; no pain; feels weak; skin moist, rather cold. — Cont. pilul. hydrarg. cum ipecac. Cont. frictio et haust. anodyn.

30th.—Passed a good night; has neither pain nor straining; stools copious, watery, and bloody, with small pieces of formed fæces floating in them; tongue the same; pulse very quick and frequent, but neither full nor hard; sickness at stomach continues, and he vomits frequently.—Ol. ricini, ℥j. Omit the pills.

Evening.—Stools feculent, with some bloody water; tongue furred; says he feels quite easy, and has no pain any where, nor has he any straining; but on pressure being made at the cæcum, he acknowledges pain, and there is fulness at this place; pulse full and hard.—Apply twenty leeches to the region of the cæcum. Foment the abdomen, and repet. pilul. hydrarg. cum ipecac.

31st.—Pulse full, and rather hard, 102 in a minute; stools consist of bloody water; tongue yellow, furred, and rather dry; the leeches have relieved the pain at the cæcum very much; no fæces have been passed. — Cont. pilul. hydrarg. cum ipecac. et opii, gr. ss. add. Enema ipecac. Mist. purg. ℥j.; to be repeated in two hours if fæces are not evacuated.

Evening.—Motions copious, watery, and offensive, yet not of a putrid fœtor, but the fœtor of fæces which have a brown colour; feels exceedingly weak; tongue cleaner; skin moist; pulse hurried; has no straining or pain at all, but feels sick at stomach.—℞ Calom. gr. xij.; opii puri, gr. ij. h. s. s. Mist. salin. febrif. Sago and wine, &c.

June 1st. — Pulse 108, small and weak; the stools passed in the night are watery, with blood and some fæces at the bottom; the straining is quite gone, and he has no particular pain, but when pressure is made on the belly it feels sore; his tongue is foul and dry; has no great thirst. — R Infus. gentian. et sennæ, ℥ij.; magnes. vitriol. ʒij. add.; to be taken every two hours till full purging is produced. Apply a large blister to his stomach. Mist. salin. febrif. ℔j.; a glassful every three hours.

Evening. — Stools watery and copious, of a brown colour; his belly is swelled a good deal; tongue cleaner; pulse frequent and hurried; skin not cold; the blister has done its duty, and is very painful. — R Opii puri, gr. x.; ammon. carb. gr. xv.; confect. aromat. q. s. Ft. pilul. no. vj.; one to be taken every three hours.

2d. — Died about five o'clock in the morning.

Examination, four hours after Death. — The surface of the liver was of a dark-blue colour. This viscus was somewhat enlarged, but its structure was healthy. The gall-bladder was full of bile, but the ducts were open. Violent inflammation, ulceration, and sphacelation, existed from the cæcum to the descending colon, where these lesions terminated; but the whole gut, to the rectum, was amazingly inflated and enlarged. An ulcer had made its way through the cæcum. The rectum was more distended than we have ever seen it. A considerable quantity of bloody serum was found in the chest. The lungs were of a purple hue. There was a good deal of water in the pericardium.

CASE CLXXVII. — *Dysentery commencing in a sub-acute Form, and becoming more acute from injudicious Treatment. — Post Mortem Examination.*

THOMAS MORGAN, ætat. 24, 1st Battalion Artillery, July 1st, 1820, admitted this morning with a pain in the region of the cæcum, and purging; tongue much excited; pulse small: skin natural. — Pulv. jalap. comp. ʒj. Spoon diet.

Vespere. — Purged a good deal, and passed blood and slime; tongue better; no pain in his belly; pulse and skin natural. — Sumat calom. ʒj. et opii puri, gr. ij. horâ somni. R Mist. purg. ʒiij. primo mane.

2d. — Says he feels more pain in his side this morning; pulse, skin, and tongue, pretty natural; two stools in the night; took his purgative. — Appl. hirud. xvj. parti dolenti.

Vespere. — Medicine purged him freely; side better. — R Pilul. aloët. cum calom. ter die, et mist. amar. cum sennâ, ʒiij. omni nocte.

3d. — Side easier; stools scanty, with straining; pulse good; skin cool; tongue clean. — Sumat mist. purg. stat. Enema purg. Cont. alia.

4th. — Alvine evacuations of a yellow colour; side easy; tongue excited; pulse and skin natural. — Cont. med.

5th. — Tongue looks better, and he is easy; appetite good; bowels pretty regular. — Cont. med. Half diet. — 6th. As yesterday. — Cont. med.

7th. — Complains of straining, severe tenesmus, and pain at the scrobiculus cordis; tongue excited; pulse calm; skin warm, but moist. — Habeat mist. purg. $\bar{3}$ ij. necnon enema purg. Appl. hirud. x. regioni epigastricæ, postea fatus.

8th. — Four stools in the night, of a dark colour; says he passed a quantity of coagulated blood yesterday; the pain at the epigastrium is relieved, but he feels a general soreness and considerable heat in this region; tongue excited; slight straining; great thirst; appetite impaired; tenesmus relieved. — Capiat ol. ricini, $\bar{3}$ ij. stat. Habeat enema purg. bis die. Appl. hirud. xij. epigastrio.

9th. — The pain complained of yesterday is relieved; purged freely, and his stools are better in appearance; tongue moist. — Cont. med. ut antea.

10th. — Tongue clean; pulse and skin natural; says he feels a burning sensation at the scrobiculus cordis, and some degree of pain; appetite pretty good; no particular thirst. — Appl. emplast. lyttæ regioni epigastricæ. Cont. med.

11th. — Better. — Cont. med.

12th. — Tongue clean; says he feels very weak; stools dark-coloured, attended with some straining; belly easy. — Cont. med. Habeat enema purg.

Vespere. — Several brown-coloured stools, attended with straining, in the forenoon; no stools since, but he is troubled with tenesmus. — Habeat enema anodyn. stat. et hora somni. Calom. gr. x. cum opio, gr. j.

13th. — Five or six scanty stools during the night, attended with tenesmus and straining; pulse soft and calm; heat natural; tongue clean; belly quite easy; no thirst; appetite impaired. — R Infus. sennæ, $\bar{3}$ jv.; tinct. cardam. $\bar{3}$ ij. stat. sumend. Habeat enema purg. Appl. hirud. x. ossi sacro.

14th. — Medicine purged him freely yesterday; frequent, scanty stools in the night, attended with straining and some tenesmus; stools of a brownish colour, no blood; belly perfectly easy; tongue clean; pulse soft and calm; skin natural. — Omit. pilul. Habeat enema purg. Repet. haust. purg. ut suprâ. Capiat mist. salin. comp. $\bar{3}$ ij. tertiâ quâque horâ. Sago and milk for dinner.

Vespere. — Some straining still. — Repet. enema anodyn. Cont. mist. salin. ut antea.

15th. — Tongue clean; pulse and skin natural; belly easy, but he complains of a good deal of straining still, and he passes very little at a time, and chiefly mucus. — R Infus. sennæ, ℥jv.; tinct. cardam. ℥ij. M. ft. haust. stat. sumend. Fetus pro sede.

Vespere. — Straining less severe; stools copious, tenacious, and bilious; tongue clean; pulse and skin natural. — R Hydrarg. submur. ʒj.; opii puri, gr. ij.; pulv. ipecac. gr. iij. M. ft. pilul. ij. horâ somni sumend. Cras mane mist. purg. ℥iij.

16th. — One stool only, of a brown colour; straining relieved, and he feels altogether much better; tongue slightly covered with a brown fur; pulse and skin natural; took his medicine. — Cont. mist. salin. Soup for dinner.

Vespere. — Medicine purged him freely in the morning; straining returned this evening. — Repet. pilul. ut suprâ, h. s. Cont. mist. salin. Complains of considerable difficulty in voiding his urine. — R Potass. nit. ℥ij.; decoct. oryzæ, ℔ij. M. ft. potu ad libitum.

17th. — Difficulty in voiding his urine continues; several scanty stools, chiefly slime, but very little or no straining; says he feels considerable pain in the whole course of the colon; no particular tension of his belly; tongue clean and rather dry, but a good deal excited; no thirst. — Cont. mist. purg. stat. Appl. hirud. xx. abdom. Habeat enema purg. Cont. mist. salin. et potus ut heri. Habeat baln. tepid. post hirud.

Vespere. — Stools of a dark-green colour; the difficulty in voiding his urine was very severe this afternoon, when he had an anodyne enema and a draught with spirits of nitre, since which he passed a little urine, and he feels easier; some straining still; the pain in his belly relieved; tongue white and furred; pulse small, but not quick; skin natural. — Repet. enema anodyn. Cont. mist. salin. comp. sine vin. antim. Capiat ℥ij. pro re natâ. Repet. pilul. ij. h. s. ut heri, cras mane repet. mist. purgans.

18th. — The difficulty in passing his urine returned; belly quite easy, but there is some tension of abdomen; tongue moist, and slightly covered with a brown fur; pulse good; no uneasiness in the region of the bladder, but he feels severe pain in the course of the urethra; great thirst; stools feculent, of a green colour, attended with straining. — Repet. enema anodyn. Cont. mist. salin.

Vespere. — Stools copious, feculent, and of a green colour; voids his urine much better; tongue clean and moist; pulse and skin natural; troubled a good deal with griping, some straining, and tenesmus. — Appl. hirud. x. ossi sacro; post hirud. habeat baln. tepid. quàm primùm. Cont. med. Repet. enema anodyn.

19th. — Much better; no stool since last evening; still some difficulty in voiding his urine; tongue rather furred, but moist; pulse and skin natural; he complains of thirst; appetite impaired. — R Tinct. ferri muriat. ℥x.; aquæ puræ, ℥ss. omni quartâ parte horæ sumend. Cont. med. ut antea. Repet. enema pro re natâ. Soup for dinner.

Vespere. — Difficulty in voiding his urine continues; he took the tinct. ferri muriat. without relief; the eighth dose made him very sick, and he vomited two or three times. The pain in the course of the urethra is very severe, and he is troubled with flatus; stools of a dark-green colour, feculent, and pretty copious; some straining; says the anodyne enema makes him very sick and giddy; tongue pretty clean; pulse rather frequent, but soft; skin somewhat dry. — Habeat ol. ricini, ℥ij. cum aquâ menth. stat. Habeat enema oleosum hâc nocte, necnon balneum tepidum. R Mist. camph. ℥jss.; spirit. æther. nitros. ℥ss.; vin. antim. ℥xx. M. ft. haust. tertiâ quâque horâ capiend.

20th. — Purged freely from the oil, and his stools are very foul and tenacious, attended with straining; voided no urine since last report till this morning, and then only a few drops; the pain in the course of the urethra is considerably less this morning; medicine sickens him; tongue moist, and of a black colour (probably from the tinctura ferri given yesterday); pulse 96 and full, but soft; skin of a natural heat; no particular thirst; appetite much impaired; had a little sleep last night; he complains of a burning sensation about his belly, but no pain; he voided a good deal of flatus upwards during the night; there is no particular tension of his bladder or abdomen; says he feels considerable relief from the bath last night; some pain on pressure of the colon. — Repet. haust. ex ol. ricini statim, et appl. hirud. xx. coloni. Cont. baln. tepid. bis die. Cont. mist. salin. comp. sine vin. antim. Repet. enema oleos. bis die.

Vespere. — Voided about ℥j. of urine since last report; no pain in the course of the urethra; stools tenacious and foul; pulse frequent, soft, and firm; skin dry, but not hot; tongue moist, and still black; teeth dry; considerable anxiety about him; says he feels no pain any where this evening; he is very weak. — R Pilul. aloët. cum calom. no. 1. ter die sumend. R Mist. amar. cum sennâ, ℥ij. bis die sumend. Appl. cataplas. comp. cum unguent. hydrarg. ℥j. bis die, et fots pro re natâ. Cont. enema domesticum. Sago and wine.

21st. — Stools tenacious, of a green colour, tinged with blood; passed very little urine since last evening, and the pain in the urethra is returned; has a good deal of straining; no pain in his belly or loins; pulse about 80, small and irritable; heat natural; tongue pretty clean, but dry. — R Potass. acetat. ℥ss.; aquæ menth. ℥jv.

M. ft. haust. statim. Repet. enema oleos. pro re natâ. Fetus benè utend. Potus cum decoct. oryzæ, et cryst. tartar.

Vespere.—Frequent copious stools, of a dark-yellow colour, and curdled, with considerable tenesmus; voided nearly a pint of urine to-day, with a good deal of straining when he passed it, and a little at a time; he feels much relief from fomentations; vomited the kali draught immediately after taking it, when he had ʒj. repeated with aqua menth. pip. ʒij. every hour, which he retained on his stomach; pulse 100, pretty good; skin cool; tongue a good deal excited and dry; less anxiety about him this evening; he complains of want of sleep.—Cont. kali. acetat. ʒj. ut antea, necnon enema oleos. pro re natâ. Potus ut antea, et mist. salin. The catheter passed with some little difficulty from spasm, and about six ounces of urine were drawn off, which gave him great relief.

22d.—Frequent stools, of a brown, tenacious appearance, copious, and slightly tinged with blood; no straining; he voided a little urine occasionally during the night, and he feels no particular uneasiness in this respect; seized with syncope about five o'clock this morning, and a good deal of griping, when he had an enema; was fomented, and took the following:—R Mist. camph. ʒjss.; spirit. lavend. comp. et spirit. æther. nitros. aa ʒss. M. ft. haust. At present (7 A.M.) he feels easier, but extremely weak; pulse 96 and pretty firm, soft; skin of a natural heat; tongue moist, and less excited than yesterday; took a little wine and water a quarter of an hour ago, and he says he feels much better.—Cont. enema oleos. et fetus. Cont. pil. aloët. cum calom. ter die ut antea, necnon haust. amar. Repet. potass. acetat. ʒj. ter die.

Vespere.—Had a better day; stools as at last report, but passed more blood; pulse firm, and pretty good; skin natural; tongue moist, but excited; voided his urine several times, but small in quantity each time; says he feels rather easier; less restless, and not so much anxiety about him.—Cont. omnia ut antea.

23d.—Frequent stools since last report, chiefly mucus intermixed with blood; very little straining; voids his urine better, and he continues easy; says his belly is very cold and sore inside; no tension of abdomen; tongue moist, and covered with a brown fur; pulse 100, firm and pretty regular; heat natural; skin covered with a warm moisture, but he complains of its being a cold sweat; thirst urgent; appetite much impaired.—Cont. cataplasma. Habeat enema purg. Cont. alia. Arrow-root and wine.

Seven, A. M.—He complains of great pain in his urethra, and says the catheter may be passed.—ʒvj. of urine drawn off, which relieved the pain.

Vespere. — Stools copious, foul, and tinged with blood; no straining; heat natural; pulse good; tongue moist; voided a little urine since last report; has just now passed a small slough from the intestine. — R Confect. aromat. ℥j.; mist. camph. ʒjss.; aquæ ammon. ℥x. M. ft. haust. quartis horis sumendus. Cont. alia.

24th. — Purged frequently since last evening; stools chiefly mucus and blood, with a quantity of brown-coloured matter, passed without any straining; voided two or three more portions of the sphacelated villous coat of the intestine; he complains of great soreness, and a sense of coldness over the whole abdomen; no tension; tongue moist, but furred in a slight degree; pulse 110, firm, soft; heat perfectly natural; great thirst; passed a little urine occasionally during the night; he feels no pain nor uneasiness in the region of the bladder or in the urethra; is extremely weak; countenance very sallow, with considerable anxiety and restlessness. — Cont. haust. anodyn. cardam. ut heri præscript. Arrow root and wine. Habeat enema purg. Cont. cataplas. abdomini. Fetus pro abdomine et sede. R Pilul. hydrarg. cum opio et ipecac. no. 1. ter die. Vin. ʒvj. in die.

Vespere. — Pulse 108, and pretty firm; skin natural, but he complains of having had cold sweats during the day; tongue moist and clean; frequent stools, feculent, intermixed with mucus, but very little or no blood to-day; urine still scanty; he is extremely weak, and very restless and irritable; says the poultice makes his belly feel very uneasy. — Omit. cataplas. Appl. zona. Cont. alia, ut antea.

Nocte. — Stools as above, and he feels better since the application of the bandage to his belly. — R Hydrarg. submur. ℥j.; opii puri, gr. ij. M. ft. pilul. ij. horâ somni sumend.

25th. — Frequent stools since last report, and scanty, of a dark-brown, bloody appearance, extremely offensive, and containing one very large and several small sloughs from the intestine; no straining all night nor pain, but he still complains of the soreness in his belly; made very little urine; pulse 110, and rather small; skin natural; tongue clean and moist; he is very weak. — Capiat ol. ricini, ʒij. statim. Arrow-root and wine. Habeat enema anodyn. bis die.

One, P.M. — Very restless since last report; stools frequent, very offensive, and of a dark-brown, bloody appearance, with a quantity of small sloughs passed without any straining; he complains a good deal of flatulence and of coldness about his belly; no tension of abdomen; pulse frequent and feeble; skin warm, but his face and forehead are covered with a cold sweat; tongue clean and moist. — Cont. fetus pro abdomine. R Aquæ menth. ʒij.; spirit. lavend. comp. ʒss. M. ft. haust. stat. sumend. Cont. vin. et haust. cardam. ut antea. Repet. enema anodyn. pro re natâ.

Vespere.—Stools very copious, of the same appearance; skin cold; pulse extremely feeble; tongue moist and clean, but he seems to be sinking fast.—Cont. ut suprà, et add. haust. spirit. æther. sulph. ʒss.

26th.—Passed an extremely restless night; skin perfectly cold; pulse scarcely felt at the wrist; tongue moist; a strong cadaverous smell from his body, and he appears to be sinking very fast.—Cont. vin. et med.

Vespere.—Stools frequent since last report, and chiefly blood; no pulse; skin cold, and he is extremely restless.—Cont. omnia.

27th.—Expired at four o'clock this morning.

Examination, three hours after Death.—The large intestines were ulcerated throughout the whole course, to a very considerable degree, particularly about the cæcum, sigmoid flexure, and rectum, and the mucous coat sphacelated and partly detached. The sigmoid flexure formed a complete loop in the pelvis.* The whole colon was distended with a large quantity of highly offensive, dark-brown, bloody, feculent matter. The small intestines were of a very dark colour, with spots of inflammation externally. The external coat was covered with a quantity of green, tenacious matter. The liver, lungs, spleen, and kidneys, were healthy. No water in the bladder. The heart loaded with fat, and rather enlarged. The usual quantity of water in the pericardium.

Remarks.—This case was treated with too active purgation after the tongue became clean; and hence, in our opinion, the straining was augmented. With respect to the history of the disease, the existence of a burning sensation, followed by soreness in the course of the colon, deserves attention, as indicating the existence of inflammatory action. The supervention of sphacelation of the mucous surface of the bowel was indicated by a sense of coldness in the abdomen, cold sweats, anxiety, restlessness, &c. (See the reports of the 23d and 24th.) The position of the sigmoid flexure of the colon in the pelvis; the disease of this viscus and cæcum, where the disease seemed to commence; and the intimate connexion between the colon and urinary organs, are deserving notice.

CASE CLXXVIII.—*Simple Dysentery, from Accumulations, &c. in the Colon.*

See Plate XV. fig. 2, Vol. I., and Plate XXXIV.)

PATRICK FITZSYMONS, recruit, aged 17, just arrived from England. He has for some time been affected with the symptoms of dysentery, though he has not complained

* See the Section on Elongation and unnatural Positions of the Colon, p. 89.

since he arrived at the regiment till now, 26th May, 1816, eight o'clock, P. M. — *Habeat hydrarg. submur. gr. x. Injiciatur enema emolliens.*

27th. — He complains of tenesmus and pain in the lower part of the abdomen. — *Adhib. parti abdom. dolenti hirud. xvj. Habeat ol. ricini, ℥ij. Repet. enema emolliens.*

Vespere. — Tongue moist; stools pretty natural; he complains of griping in the belly. — *Habeat hydrarg. submur. gr. x. Repet. enema emolliens. Bibat infus. tamarindi.*

28th. — Stools scanty, yellow; the griping continues; no tenesmus. — *Habeat ol. ricini, ℥ij. Repet. enema emolliens.*

Vespere. — Stools tinged with blood, and morbid. — *Habeat hydrarg. submur. gr. x. Repet. enema emolliens.*

29th. — Stools tinged with blood; he still complains of some uneasiness of the lower part of the belly, but he thinks himself better. — *Habeat ol. ricini, ℥ij. et hydrarg. submur. gr. x. h. s. Repet. enema emolliens stat. et vespere.*

30th. — Stools still tinged with blood; he complains a good deal of the pain about the lower part of the belly. — *Adhib. imo abdom. hirud. xvj. Habeat ol. ricini, ℥ij. Repet. enema emolliens stat. et horâ somni.*

31st. — Stools slightly tinged with blood; he complains again of griping in the belly. — *Habeat ol. ricini, ℥ij. Repet. enema emolliens.*

June 1st. — Evacuations slimy and tinged with blood; griping less. — *Habeat ol. ricini, ℥ij. Repet. enema emolliens.*

Vespere. — Four stools tinged with blood; there is little griping, but some tenesmus. — *Habeat hydrarg. submur. gr. x. Repet. enema emolliens.*

2d. — Stools slimy, copious, frequent; tenesmus continues. — *Habeat ol. ricini, ℥ij. Repet. enema emolliens.*

Vespere. — Stools copious, feculent, dark-green; tenesmus; debility; pain of the belly. — *Habeat hydrarg. submur. gr. x. h. s.*

3d. — Stools dark-green, mixed with some blood; griping and tenesmus continue. — *Habeat medicaminis Cheltenham water nominati, ℔j. Hydrarg. submur. gr. x. horâ somni.*

4th. — Skin clammy; tongue white, dry; stools frothy, mixed with much mucus and blood; tenesmus griping, and general uneasiness over the abdomen. — *Adhib. abdom. hirud. xvij. Habeat ol. ricini, ℥ij. Injiciatur enema domesticum.*

Vespere. — Pulse frequent; skin hot; tongue white; stools quite feculent; uneasiness of the belly continues. — *Habeat hydrarg. submur. gr. x. Repet. enema emolliens.*

5th. — Pulse 89; skin moist; tongue cleaner; stools frequent, mixed with blood

and mucus; slight tenesmus; general soreness over the abdomen. — Habeat stat. ol. ricini, ℥ij. et hydrarg. submur. gr. x. h. s. Repet. enema emolliens stat. et h. s.

6th. — He was frequently at stool in the night; pulse 89; skin rather dry; tongue cleaner; stools mixed with much mucus and dark blood; griping inconsiderable; he is languid and weakly. — Habeat ol. ricini, ℥ij. stat. et hydrarg. submur. h. s. Repet. enema emolliens stat. iterumque horâ somni. R Mist. salin. ℥j. Spirit. æther. nitros. ℥ij. Sit mistura; cyathus singulis horis sumendus.

7th. — He slept very little; pulse good; skin moist; tongue white; stools of a darker colour, mixed with blood and mucus; much griping and tenesmus in the night. — Habeat ol. ricini, ℥ij. Repet. enema emolliens. Habeat haust. anodyn. cum mxl. tinct. opii, horâ somni.

8th. — He slept several hours after taking the draught; skin moist; tongue white and moist; great thirst; no stool; no pain of the bowels. — Habeat ol. ricini, ℥ij. Repet. enema emolliens.

Vespere. — Pulse good; skin dry; tongue moist; stools feculent, intermixed with blood; some griping; he is very languid. — Cont. mist. salin. Repet. enema emolliens. Habeat hydrarg. submur. gr. x. Descendat in balneum tepidum.

9th. — He slept after bathing, but suffered from griping in the night; tongue cleaner; stools viscid, green, slightly tinged with blood; he appears much better. — Cont. mist. salin. Repet. enema emolliens stat. et horâ somni. R Magnes. sulph. 3jv. Aquæ puræ, ℥x. Sit solutio statim sumenda. Involvatur abdomen fasciâ laneâ.

10th. — Pulse good; skin cool; tongue clean; stools very copious, dark-green; he thinks himself better. — Habeat ol. ricini, ℥ij. Repet. enema emolliens stat. et h. s.

11th. — Stools dark, feculent; the griping continues; he seems better. — Repet. enema emolliens. Habeat ol. ricini, ℥ij.

Vespere. — Skin moderately warm and moist; tongue quite clean; stools deep brown, slightly tinged with blood; still some griping. — Repet. enema emolliens.

12th. — Tongue clean; pulse good; stools foul and morbid; some griping in the night. — Ol. ricini.

13th. — Tongue clean; stools are slightly tinged with blood. — Habeat med. Cheltenham water, ℥j.

14th. — Skin natural; tongue clean; stools slightly tinged with blood; his strength is much improved; appetite improved. — Repet. med. Cheltenham water.

Vespere. — Skin moist, clammy; tongue clean; the griping still recurs. — Habeat hydrarg. submur. gr. x. Injiciatur enema emolliens.

15th. — Pulse 78; skin cool; tongue moist; much thirst; stools frothy, feculent,

slightly tinged with blood; he complains of griping through the whole abdomen. — Habeat mist. salin. \mathfrak{z} ij. secundâ quâque horâ. Ol. ricini, \mathfrak{z} ij. stat. Injiciatur enema emolliens.

Vespere. — Pulse 68; skin dry; tongue moist; stools copious, feculent, mixed with blood; the griping continues; no tenesmus. — Descendat in balneum tepidum.

16th. — Pulse good; skin moist; tongue pretty clean; stools foul, mucous, slightly tinged with blood; griping less. — Habeat ol. ricini, \mathfrak{z} ij. Cont. mist. salin. Repet. enema emolliens.

Vespere. — Pulse 84; skin moist; tongue pretty clean; stools feculent, intermixed with mucus; griping inconsiderable. — Habeat hydrarg. submur. gr. x. Repet. enema emolliens.

17th. — Skin cool; tongue white, moist; stools scanty, mucous, yellow, with oblong, white-coloured masses; considerable griping in the night. — Habeat pulv. purg. Cont. mist. salin.

Vespere. — Skin cool; tongue cleaner; stools fetid, intermixed with white masses, apparently of a fatty nature; ptyalism very copious; no griping. — Capiat hydrarg. submur. gr. x. Habeat haust. anodyn. cum tinct. opii, \mathfrak{m} xl. horâ somni.

18th. — He continued easy in the night; tongue moist and clean; no stool. — Repet. enema emolliens stat. et horâ somni. Cont. mist. salin. febrif.

19th. — Pulse and skin natural; tongue pretty clean; stools tinged with blood; griping considerable in the night. — Habeat pulv. purg. Repet. enema emolliens et mist. salin. febrif.

Vespere. — The cathartic operated; skin natural; tongue clean; stools very copious, of a brown colour, frothy, feculent, with some blood; griping severe. — Habeat hydrarg. submur. gr. x. Repet. enema emolliens.

20th. — Pulse 84; skin cool; tongue clean; stools rather slimy, tinged with a few drops of blood; griping. — Habeat ol. ricini, \mathfrak{z} ij. Cont. mist. salin.

Vespere. — Stools copious, quite feculent; no griping; he thinks himself better in all respects. — Repet. enema emolliens.

21st. — Skin moist; tongue clean; stools copious, feculent, slightly tinged with blood; no pain of the belly. — Habeat med. Cheltenham water, \mathfrak{f} ij.

Vespere. — Pulse 89; skin cool; tongue clean; stools scanty; he complains again of griping. — Habeat hydrarg. submur. gr. x. Repet. enema emolliens.

22d. — Pulse frequent; skin cool; tongue quite clean; evacuations crude and viscid, and discharged with much griping. — Adhibeatur abdom. emplastr. lyttæ. Habeat pulv. purg. Cont. mist. salin. febrif.

Vespere. — The blister has produced a copious discharge; pulse 86; skin cool,

rather dry; considerable emaciation; tongue moist; much thirst; stools copious, slightly tinged with blood; griping not severe; he is very languid.—Omit. mist. salin. R Mist. camph. ℥j.; spirit. æther. nitros. ℥iij. Ft. mist. cujus ℥j. horis singulis capiat. R Tinct. opii, ℥xliv.; aquæ puræ, ℥jss. Ft. haust. h. s. s.

23d.—He was very comfortable during the night, and sweated much after the draught; pulse 89, rather feeble; skin moist; tongue moist, pretty clean; no stool since last visit; he is quite easy, but weak.—Cont. haust. cum camph. heri præ. R Ol. ricini, ℥ij.; aquæ menth. pip. ℥j. Ft. haust. stat. sumend. Injiciatur enema emolliens.

Vespere.—Evacuations copious, feculent; pulse 89; skin moist; tongue moist; no griping nor pain of the belly; tenesmus for the last four hours; considerable languor.—Habeat hydrarg. submur. gr. x. Repet. enema emolliens.

24th.—He had little sleep; pulse 96; skin moist; abdomen much swelled; tongue yellow; thirst; stools scanty, tinged with blood; great debility; he is now free from pain.—Habeat ol. ricini, ℥jss. Repet. enema emolliens.

Vespere.—Pulse 76; countenance more flushed than usual; skin cool; tongue cleaner; stools feculent; he is very faint and languid.—R Tinct. opii, ℥l.; aquæ puræ, ℥jss. Ft. haust. h. s. s. Repet. enema emolliens.

25th.—He had some sleep; pulse 96; skin moist; tongue pretty clean; four stools, of a yellow colour; some pain in passing urine; slight uneasiness of the bowels; he is at present pretty comfortable.—Repet. enema emolliens.

Vespere.—Pulse frequent; skin rather hot; tongue whitish, moist; thirst considerable; stools scanty, mucous; tenesmus; he thinks himself stronger.—Repet. enema emolliens. Descendat in balneum tepidum.

26th.—He was easier after bathing, and passed the night comfortably; pulse 104, small; skin cool, moist; tongue foul, rather dry; stools copious, feculent, apparently purulent; no tenesmus; difficulty in passing urine; he complains of pain when pressure is made on the head of the colon, and has a sensation of hardness of the belly, but none is discovered on examination.—Foveatur abdom. Habeat tinct. muriat. ferri, ℥xij. ter in die.

Vespere.—Pulse 118, small; skin moist; tongue moist, and of a dark-yellow colour; considerable thirst; stools scanty, fluid, passed with much griping, and slight tenesmus; difficulty of passing urine; no pain of the belly.—Foveatur abdom. sedulo. Habeat hydrarg. submur. gr. x. Repet. enema emolliens.

27th.—No sleep; pulse 89, fuller; skin moist; tongue cleaner; stools copious, green, fetid, mixed with blood; he passes urine with less difficulty; some tenesmus; he is very weak and faint.—Foveatur abdom. R Ol. ricini, ℥ij.; aquæ menth. pip. ℥j. Ft. haust. stat. sumend. Repet. enema emolliens.

Vespere.—He was frequently at stool, and had no sleep; stools feculent; much debility.—R Tinct. camph. comp. ℥ss.; aquæ ammon. ℥xx.; aquæ puræ, ℥ij. Ft. haust. h. s. s.

28th.—He slept better than usual, and was very quiet during the night; pulse good; skin moist; tongue blanched, but not foul; stools feculent, tenacious, green, with water like the brine of meat; no straining.—Omit. haust. cum camph. R Acid. nitros. ℥j.; aquæ puræ, ℥ij.; sacch. purificat. ℥ij. Ft. haust. cujus cyathum singulis horis capiat.

Vespere.—Pulse quick, small; stools frequent, purulent, very fetid; he complains again of dysuria; pain in the loins and lower part of the belly; great debility.—Cont. haust. acid. heri præscriptus. R Tinct. camph. comp. ℥j.; aquæ ammon. ℥xx.; tinct. muriat. ferri, ℥xij.; aquæ puræ, ℥ij. Ft. haust. h. s. s.

29th.—He was pretty comfortable in the night; pulse small, weak; tongue foul, of a pale-yellow colour; no griping; great heat about the bladder, and constant inclination to pass water, which distresses him very much.—Injiciatur enema anodyn. R Tinct. muriat. ferri, ℥xij.; aquæ puræ, ℥j. Ft. haust. stat. sumend.

Vespere.—Bowels easier; he complains much of dysuria, but he passes urine in a full stream.—R Tinct. muriat. ferri, ℥xjv.; aquæ puræ, ℥ij. Sit haust. tertiâ quâque horâ sumend.

30th.—Tongue black and crusted in the centre; stools frequent, of a colour resembling dark grumous blood, with black matter floating on the surface; he complains much of pain in passing urine; great debility.—Cont. haust. cum tinct. muriat. ferri. Habeat ol. ricini, ℥ij. Repet. enema emolliens.

Vespere.—Pulse very weak; he still complains of dysuria; he is greatly exhausted, and appears to be rapidly sinking.—Habeat haust. anodyn. stat.

July 1st.—He passed the night more comfortably; pulse frequent and small; skin cold; dysuria less.—Habeat ante meridiem horâ undecimâ, vin. ℥ij.; post meridiem primâ horâ quintâque repet.

Vespere.—Breathing rather difficult; pulse thready; skin covered with a cold, clammy sweat.—He died in the night.

Examination.—The contents of the abdomen were in general of a much darker colour than usual. The liver was rather pale, but was not altered in structure. The gall-bladder contained bile, of a green colour, but was not much distended. The stomach was of a pale colour. The head of the duodenum appeared much inflamed. The jejunum and ilium, which were all removed from the body, and examined separately, were of a green and purple colour, but exhibited no other mark of disease. The whole of the colon was gangrenous, greatly elongated and increased in size, enormously

distended, and devoid of its usual appearance. It was singularly contorted and convoluted, and formed a loop in the left pelvic region. — (See Vol. I. Plate XV. fig. 2.) — It was of a greenish purple colour, and firmly adhered to the surrounding parts. The arch of the colon was firmly attached to the under part of the liver and spleen. In separating the rectum from the peritoneum, it rent like a piece of moist paper, and the contents flowed into the abdomen. The lungs were of a very pale colour, and more dense than usual. A firm attachment was observed to exist between the right lobe, the pericardium, and the diaphragm. The left lobe was so firmly attached to the pleura costalis and pericardium, that they seemed to constitute one uniform inseparable mass. At first it appeared as if the left side had been colourless, and when it was more closely examined, the adhesion could not be separated without cutting into the pulmonary substance. The heart was flaccid.

Remarks. — It would seem that fæcal accumulations, resulting from the displacement of the colon, farther increased this state, irritated the mucous surface of the bowel, and that disease proceeded from continued irritation of the intestines to asthenic inflammation, and thence to gangrene.

CASE CLXXIX. — *Acute Dysentery, supervening to the sub-acute Form, and terminating fatally.*

ROBERT CLARKSON, admitted October 17, 1815, was seized with diarrhœa and pain of the belly while on the main guard. The stools were tinged with blood: he had an ounce and a half of castor oil, which produced copious évacuations, with some blood; pulse 84; skin warm and moist. — Pilul. calom. et antimon. Enema anodyn.

Vespere. — Frequent stools; little griping; some fever; pulse 84; no constant pain of the belly; skin warm. — Calom. gr. x. Enema ipecac. et opii.

19th. — Much better; skin warm; stools greenish; pulse 84; no pain. — Tinct. rhei, ʒj. Enema anodyn.

Vespere. — Stools slimy and greenish; some tenesmus. — Calom. gr. x. Enema anodyn. horâ somni.

20th. — Stools improved; tenesmus abated. — Solution of salts.

Vespere. — Stools foul; some tenesmus; pulse frequent; skin warm and moist. — Capiat pilul. calom. et antim. Enema ipecac. et opii, h. s.

21st. — Stools feculent; no particular pain of the belly; tongue natural. — Solution of salts.

Vespere. — Stools scanty; mouth tender. — Enema anodyn. horâ somni.

22d. — Some uneasiness of the bowels this morning; stools feculent. — Ol. ricini, $\bar{3}j$. ex aquâ menth. pip.

Vespere. — Copious, light-coloured stools in the day; little pain; some tenesmus. — Enema anodyn. horâ somni.

23d. — Stools improved; no griping; some tenesmus. — Enema ipecac. cum opio.

Vespere. — Tenesmus continues; stools bloody; no griping; pulse 78. — Pilul. calom. et antim. Repet. enema ipecac. et opii.

24th. — Four stools, greenish; no griping; some tenesmus. — Repetatur enema ipecac. et opii.

25th. — Dejections good; no pain; general appearance improved.

26th. — Stools pretty natural, voided without pain. — Solution of salts.

27th. — Some griping; tenesmus. — Enema anodyn.

28th. — Improved; stools pretty good. — Ol. ricini, ex aquâ menth. pip.

29th. — Little or no complaint. 30th. — Stools good; no pain. — Solution of salts.

November 1st. — Convalescent. — Solution of salts.

Vespere. — Stools foul, copious; little griping. — Pilul. calomel. et antim.

2d. — Stools thin, yellow; no pain; better.

Vespere. — Stools good; little or no griping. — Enema anodyn. h. s.

3d. — Stools of a good colour; no pain; better.

4th. — Some uneasiness and griping in the night; stools scanty. — Ol. ricini, $\bar{3}j$.

5th. — Some griping; stools thin, yellow. — Repet. ol. ricini, $\bar{3}j$.

Vespere. — Copious stools from the medicine; pulse 78. — Capiat pilul. calom. et antim. Enema ipecac. horâ somni.

6th. — Stools good; little or no pain. — Solution of salts.

Vespere. — Four thin, yellow stools; little pain. — Pilul. calom. et antim.

7th. — Pulse 73; stools good; no pain of the belly. — Solution of salts.

Vespere. — Stools from the salts; pulse 78; no pain; no tenesmus. — No med.

8th. — Three stools, yellow, watery; pulse 73; no pain of belly.

9th. — Stools clayey; some griping; pulse 84. — Ol. ricini, $\bar{3}j$.

Vespere. — Very copious, high-coloured stools; bowels much relieved; pulse 84; tongue clean. — Calom. gr. viij. horâ somni.

10th. — Stools dark yellow; very little uneasiness; pulse 84; tongue furred. — Solution of salts.

11th. — One natural stool; no pain. — Infus. amar. cum sennâ, $\bar{3}jss$.

12th. — One natural stool; no pain of the belly. — No med.

13th. — Stools perfectly natural. — Infus. amar.

15th, 16th, and 17th. — Stools natural.

Vespere. — Tormina; pulse 89. — Calom. gr. viij. Enema anodyn.

18th. — Had a bad night; painful tenesmus; stools bloody; pulse 94; skin cool; tongue white. — Ol. ricini, ℥jss. Enema ipecac. cum opio.

Vespere. — Stools frequent, copious, high-coloured, with painful tenesmus; pulse 90; skin warm and moist; tongue coated with yellow mucus. — R Pulv. ipecac. gr. iij.; opii, gr. jss. Repet. enema ipecac. cum opii, gr. ij. Foveatur abdom.

19th. — Had a bad night; stools consist of blood and mucus; painful tenesmus; pain of the lower belly; pulse 96; skin warm and moist; some nausea. Hirudines xx. abdomini. Mist. purg. Enema ipecac.

Vespere. — Much distressed during the day with tenesmus; leeches drew well; had the warm bath, after which he felt somewhat better; still tenesmus continues; ulceration observed at the extremity of the rectum; some fever; great general distress; stools thin, pale, free from blood. — Admoveantur ano hirudines x.

20th. — Felt very uneasy till he had an anodyne draught, which gave him some hours' sleep; during the latter part of the night he was restless from pain of the fundament and lower belly; this morning he does not feel worse, still there is great irritation about the rectum; pulse 100, quick; tongue yellow, loaded. — Emplast. lyttæ abdom. Enema ipecac. et opii.

Vespere. — Is much worse this evening; the blister rose partially; tenesmus more painful; pulse 120; tongue loaded; skin wet; acute pain of the lower belly. — Hirudines xx. imo abdom. R Pulv. ipecac. gr. ij.; opii, gr. ss. Ft. pilul. tertiâ quâque horâ sumend. Descendat in balneum calidum. Repet. enema ipecac. et opii.

21st. — Had the bath, after which he slept a few hours; tenesmus returned, but is not so severe; took three pills at night; this morning he finds himself better; stools more free, yellowish, and tinged with blood; pulse 108, quick and feeble; tongue rather loaded; no vomiting; countenance still very anxious; skin warm and moist. — Cont. pilul. tertiâ quâque horâ. Repet. enema. Mist. salin. febrif.

Vespere. — Stools much worse, with painful tenesmus; general irritation and uneasiness; pulse 124, small; skin hot; tongue loaded; some singultus; wishes much for a warm bath; prepare one immediately. — Omit. pilul. Repet. enema ipecac. et opii.

22d. — Had several hours' sleep after the bath this morning; countenance changed for the worse; stools copious, frequent; tenesmus less; does not complain much of the belly; pulse 126, small and weak; tongue less loaded; is very uneasy; skin warm and soft; no vomiting; eructations of flatus; no distension of the abdomen. — Repet. enema.

Vespere.—Has been very unwell all day; seems to sink; pulse 130; skin continues hot; stools are very bad, containing membranous films, with blood, and yellow feculent matter; tongue loaded; stools constant, but not passed unconsciously.—*Haust. anodyn. cum tinct. opii, m̄xl.; calom. ʒj. h. s.*

23d.—Appears to be worse this morning; hiccup in the night; uneasiness of belly; stools thin, with membranous films; no sleep; skin is warm and moist; pulse 130, weak and fluttering; tongue cleaner.—*Enema emolliens.*

Vespere.—Continual hiccup and vomiting; extremities cold; pulse indistinct and fluttering; stools are passed without his having power to retain them; breathing interrupted and frequent.—*Haust. anodyn. ut heri præ.*

24th.—A very restless and uneasy night; stools involuntary, scanty; pulse 136; skin cool, with a clammy moisture on it; tongue cleaner; countenance altered.—*R Mist. camph. ʒjss.; tinct. opii, m̄xx.; calom. ʒj. in formâ pilul.*

Vespere.—Has taken the pill, but his stomach could not retain it; has taken some sago with wine; breathing rather slower and laborious; skin warmer; vomiting and singultus more moderate; tongue moist; stools very red, passed involuntarily, but at present perfectly feculent and natural; countenance more favourable than in the morning; pulse 130 and distinct.—*Repet. calom.*

25th.—Had delirium during the night, left his cot, and got into the open air; pulse 120, distinct; tongue loaded; seems more altered in manner and appearance; singultus; vomiting; stools involuntary, not so good as at last visit.—*Haust. anodyn. cum tinct. opii, m̄xlv.*

Expired at three o'clock, P. M.

Examination, three hours after Death.—The liver was paler and somewhat softer than natural, with purple and yellow blotches on its convex surface. The gall-bladder was perfectly empty, and of a pale colour. The stomach externally was healthy, but on its internal surface, near the cardiac extremity, slight inflammation was observed to have taken place. The small intestines contained a small quantity of healthy, feculent matter, and exhibited on their internal coat slight blushes of inflammation. The ilium, with its inner coats, was considerably inflamed. The omentum was collected around the colon along its course. This intestine presented one uniform mass of disease, from its origin to its termination in the rectum. In some parts, the coats were very much thickened; in others nearly transparent. On the internal surface were observed abrasion and ulceration of the coats. The rectum at its extremity was marked with several ulcerated spots, and the whole of the villous coat had been eroded and destroyed. The other abdominal viscera were quite sound. The thoracic viscera appeared free from disease.

Remarks.—When this patient first began to complain of the disease in its sub-acute form, vascular depletions might have been more serviceable. It is probable that the disease was then entirely confined to the mucous surface of the large bowels. When the acute symptoms supervened, it was evidently owing to the extension of the inflammation to the more external coats of the bowel. Blood-letting and the scruple doses of calomel were employed here too late in the disease to be of service. This case illustrates the position which we have laid down at page 154, that the mildest form of the disease may suddenly assume the most unfavourable aspect, from the silent and undetected progress of ulceration. The pale appearance of the liver, so frequently observed in dysentery, seems to have been owing, in this and other cases, to the continued discharge of blood from the bowels, and the diminished flow of it to the liver, both by the hepatic artery, and mesenteric veins forming the vena portæ.

SECTION II.

Of Hepatic Dysentery, or Dysentery complicated with Disease of the Liver.

THIS is a form of dysentery of remarkably frequent occurrence in India. Its nature and treatment, therefore, become a matter of the greatest moment to the practitioner, especially as the complication constituting this particular variety of disease renders it one of very difficult management.

Hepatic dysentery assumes various forms or modifications: it is sometimes acute, but much more frequently sub-acute and chronic. The more acute forms of the disease are generally accompanied with an acute affection of the liver, and a very morbid state of the biliary secretion; and the chronic states with abscess, collections of purulent matter, and other organic changes in the substance of this viscus.

It would, perhaps, be one step towards the establishment of a rational mode of treatment in this very destructive form of dysentery, if the nature of the connexion subsisting between the affection of the bowels and that of the liver were clearly ascertained, and the manner in which the one supervenes to the other were closely observed. These points, however, present great difficulty, especially as they do not frequently admit of satisfactory proof, although the mind may often form a tolerably just inference on the subject, from contemplating the nature and succession of the morbid phenomena presented to it in particular cases. To these topics we beg the attention of the reader, and particularly the practitioner in the eastern hemisphere, as they distinctly point out the importance of a very early employment of the most decided means of cure within our reach, which can only be advantageously prescribed by a previous recognition of the nature of the morbid actions that are to be removed.

The great advantages resulting from this knowledge and decision on the part of the practitioner will be manifest to every one acquainted with intertropical practice. By observing the nature and extent of disease accurately at its commencement, especially in respect of the particular form of disease now about to be considered, it is more readily removed, even before those complications which it may form in a few hours if not interfered with have supervened, and before the diseased organ has become seriously injured either in its functions or structure. In our practice, however, amongst the European soldiery in India, disease is often fully formed before it comes under the observation of the practitioner. To prevent this very untoward circumstance is by no means easy, or even practicable, in some instances, however important it may be, and undoubtedly is, to the government, as well as interesting to humanity, inasmuch as it is generally beyond the influence of the medical officer. It is an evil, as we shall have to shew hereafter, which has its origin in the habits of this particular class of the community, and which, in many instances, admits of removal only through an improvement of these habits. But much may be done to remedy it, particularly by those who are in command; and how far this may be accomplished by the authority of those, and the science of the medical practitioner, we consider it our duty,

as it will be in every point of view beneficial, fully to point out. As, however, this is a subject which regards other diseases of warm climates, as well as that now under consideration, we shall conclude this undertaking with those observations which we shall have to offer respecting it, especially as it involves matters of the first importance to the welfare of the Indian army, and of European troops serving in warm countries generally.

Dysentery, when complicated with disease of the liver, admits of more than one explanation as to the nature of the connexion; and it seems to us, from repeated observation, that this connexion is of two kinds: the dysenteric affection in the first variety appears to be altogether a symptom either of a morbid secretion of bile, or of the advanced stage of structural disease of the liver, generally of its internal texture, as may be learnt from the numerous instances of inflammation and abscess of this viscus detailed in the First Volume of the Work. In the second variety, the hepatic disease seems to be induced by the disorder of the bowels, more particularly when this disorder is of a sub-acute or chronic kind, and to proceed, when thus excited, conjointly with it either to a favourable or unfavourable termination. Although the diseases of the liver and bowels, in the majority of instances, thus supervene the one to the other, and become co-existent, yet we will not deny that they may be in some cases nearly co-eval as respects their origin, or at least so very nearly simultaneous in their attack, that the priority of lesion can scarcely be detected.

In those cases, however, where, owing to the state of predisposition in which the bowels and biliary organs may be at the time, and to the nature of the exciting causes, disease is nearly simultaneously produced in these viscera, it will generally be found, upon closely analysing the phenomena, that the disordered function of the liver is remarkably efficient in producing the dysenteric affection; and that a morbid state of the biliary secretion is evident at its commencement, even although the liver may betray no other symptom of serious derangement at this period of disease.

In hepatic dysentery, therefore, we may consider the relation of morbid

action as being chiefly of two kinds: *first*, that in which the dysenteric symptoms are produced by functional or organic disease of the liver; and *secondly*, that in which the diseased actions of the liver are excited by the dysenteric disease, commencing in the manner in which we have described it in the preceding section. When the complication is once induced, the one disorder tends to perpetuate the other, and to render each much more difficult of cure, and, consequently, much more dangerous, than their simple form of existence.

The simple form of dysentery, we have already stated, generally is an acute and inflammatory disease among Europeans residing in warm climates, frequently induced, or at least promoted, by accumulations of morbid secretions and fæcal matters in the large bowels. The same characteristics are also, in some degree, applicable to hepatic dysentery; for it may be, and indeed generally is, attended with an inflammatory state of the mucous surface of the bowels, varying in degree in particular cases, and sometimes with collections of morbid matters in the *prima via*. This is particularly the case when the dysenteric disease either precedes, or is nearly coeval with, the hepatic affection. When the disease of the liver, and the morbid secretion of bile resulting therefrom, induce the dysentery, an inflammatory condition cannot so unequivocally be assigned to the mucous surface of the large bowels, in the early stages of the disease especially, although such condition undoubtedly supervenes sooner or later, according to the particular states of the viscera previous to the attack of disorder, and the various circumstances connected with the individual. In cases of this description, the morbid secretion proceeding from the diseased liver seems to irritate the mucous and muscular tunics of the bowels, to excite the extreme vessels on their internal surface to an increased and morbid exhalation and secretion; and, lastly, to excoriate and inflame these viscera. It is owing chiefly to this effect of the acrid secretions poured out by the liver, that the mucous surface of the small intestines is generally found diseased in fatal cases of hepatic dysentery, although in a less degree than that covering the large bowels,—as we shall have to shew when we describe the appearances observed upon the examinations after death from this malady.

Dysentery, when it thus supervenes to hepatic disease, may be considered in its early stages as altogether depending upon it, and removable with it, although more frequently assuming a chronic state, in consequence of circumstances which we shall have to discuss in the sequel. But as soon as the secondary affection has gone on to ulceration, it may be looked upon as an independent disease, tending quickly to the destruction of life, and having this tendency farther enhanced by the original malady, and the morbid secretions proceeding from the organ in which it is seated.

When dysentery supervenes to functional or organic disease of the liver, and becomes complicated with it, the hepatic symptoms are very frequently masked by the more urgent and violent phenomena characterising the bowel complaint; so that if the connexion be not looked for, it will often escape observation. Sometimes the affection of the liver has been evident for several days previous to the appearance of bowel disorder, and at other times the dysenteric complaint supervenes to repeated or long-continued disease of the liver: in such cases the connexion is more manifest; and in several instances, particularly when the symptoms are present which we have described in the former Volume (p. 517, *et seq.*) as characteristic of abscess of the liver, the dysenteric disorder must be viewed as being merely a symptom of that particular termination of hepatitis. This topic is illustrated by the majority of those cases which we adduced when treating of abscess of the liver; and to them we beg to refer the reader.

In many other instances of this complication of disease, particularly when the disorders of both viscera are very nearly coeval, the inexperienced observer may not detect the presence of biliary derangement until the disease is hastening to a fatal termination, and unequivocal signs of abscess are present. In cases of this description, the violence of the dysenteric symptoms absorbs the whole attention of both patient and practitioner, and the complication is overlooked. But the more experienced observer will often readily detect, even at the commencement of disorder, or at any of its more advanced periods, the real extent of disease; and will, even in the more insidious and difficult cases, from the state of the evacuations, and a careful examina-

tion of the patient, generally form a tolerably correct opinion respecting its nature, tendency, and complications.

In many cases, also, the practitioner has had occasion to observe, that well-marked disorder of the liver has been present for a considerable time, that dysenteric symptoms have supervened, and that the signs of diseased liver have entirely disappeared upon the supervention of the bowel complaint. This is a circumstance calculated to mislead the inexperienced observer of intertropical diseases; but the experienced practitioner will seldom be so misled; he will not conclude that, because the prominent symptoms of hepatic disease have disappeared, such disease does not exist; he will still dread its presence, will act as if it did exist, and will even succeed at last to detect it, amid the obscurity which for a time veiled it from his view.

But, although dysentery thus frequently supervenes, in a more or less immediate manner, to affections of the liver, in some instances appearing as nearly coeval with them, in others seeming to supervene as a remote and contingent affection,—it must be also kept in recollection, that dysentery may be the primary disease, and that the affection of the liver may be consequent upon it, not as an accidental occurrence, but as a consequence of the extension of morbid action, as in the former kind of complication.

It seems to us, as too generally supposed by pathological writers, that the morbid changes detected in the liver in deaths from dysentery have been present not only from the commencement of the dysenteric symptoms, but have actually caused them, although the affection of the liver, and the morbid state of its secretion, had escaped the detection of the practitioner. This inference we hesitate not to consider as entirely unwarranted, both by the symptoms characterising the early stages of the disease, and the manner in which morbid actions may be induced in organs so intimately related as are the liver and bowels.

The view which we are disposed to take of the subject is this: irritation induced in the mucous surface of the large bowels, so as to become pro-

ductive of increased action of the alimentary tube, elicits a greater determination and quicker circulation of the blood in the vessels supplying this part of the economy, and, consequently, an increased flow of blood in the portal vessels of the liver is thus occasioned. If, at the time when this effect is produced, the liver be either in a state of simple congestion, or, in conjunction with congestion, there be accumulations of bile in the biliary ducts and gall-bladder, an increased flow, generally of acrid or otherwise morbid bile, is thereby produced, and, on some occasions, even inflammation of the substance of the organ supervenes. But even when neither congestion nor morbid accumulations of bile are present, thus predisposing to inflammatory disorder of the liver, and heightening the affection of the bowels, the increased flow of blood in the portal vessels, necessarily proceeding from the determination to the alimentary tube, will tend to cause an augmented secretion of bile, which may also be possessed of acrid properties, and further increase the original disorder of the mucous surface of the large bowels.

It seems also to us by no means improbable that the accumulations of fæcal materials in the bowels, which so frequently are productive of the simple form of dysentery, tend occasionally to vitiate the mass of blood conveyed into the *vena portæ*, and in this manner to favour the supervention of a morbid state of the biliary secretion and of the liver itself. During the retention of morbid and excrementitious matters in the *prima via*, a part of them most probably is absorbed, carried into the mesenteric veins,* and must consequently circulate through the liver, furnishing the materials for a morbid state of the bile, and being also causes of irritation to the secreting texture of the organ. Hence may arise either disordered function or structural disease; and even occasionally both, which will aggravate the inflammatory affection of the large bowels, and even promote the extension of disease along the whole intestinal mucous surface.

Whether or not inflammatory irritation may be propagated along the mucous surface of the alimentary canal, and the common and hepatic ducts,

* See the section on the Functions of the Liver, in Vol. I. p. 27.

to the liver itself, we shall not pretend to decide. That such extension of disease is not impossible, may be granted; but to infer that it actually takes place, and that the instances of diseased liver supervening to dysentery are generally owing to the propagation of inflammatory action in this particular way, is an inference which cannot be supported by what is usually observed in *post mortem* examinations of this disease.

Considering, therefore, that hepatic disorder supervening to dysentery, and becoming complicated with it, is generally induced in the manner which we have now pointed out, the necessity of not only watching for the supervention of this complication, but also for the adoption, early in the dysenteric disease, of those measures which shall most effectually prevent it, must be apparent to every one: but of these we shall treat hereafter.

During the progress not only of dysentery but also of hepatitis, it will occasionally be observed, that the one affection supervenes to the other, disappears for a while, and then returns. Thus, during hepatitis, dysentery will sometimes take place, disappear after two or three days, the hepatic disease becoming more acute, and again return in an aggravated form. In such instances the dysenteric affection must be considered as entirely symptomatic. Thus, also, during the progress of dysentery, hepatic disease sometimes evinces itself,—the dysenteric disorder either becoming somewhat alleviated, or being for a time altogether removed, but afterwards returning, and accompanying the hepatic disease to its termination. Such cases can only be viewed as complications of the affections under consideration; disorder of the one organ inducing that of the other, and, when thus induced, being somewhat modified in character by the secondary affection. But it very seldom happens that the one disease is removed, or even much alleviated, upon the supervention of the other; on the contrary, the increased violence of the one rather absorbs the sensibility of the system, abstracts it from those parts where it is naturally in a less degree, and where its morbid excitement is less, and thus renders disease existing elsewhere, particularly when not so severe, and seated in a less sensible organ, much more difficult of detection by the practitioner.

On many occasions, also, practitioners will find in warm climates, and particularly in India, that during convalescence, either from dysentery or from hepatitis in their simple forms, exposure to any of the exciting causes of those maladies will produce one of three consequences;—either a return of the original disease, or an attack of a disorder intimately allied to it, or both. Thus, if, during convalescence from hepatitis, the patient be exposed to the night-air, or is imprudent in his diet and regimen, he will either experience a relapse of the hepatic affection, or be seized with dysentery; or, in addition to a return of the liver complaint, dysentery may be induced, and both disorders proceed *pari passu*, each tending to aggravate the other. The same observation equally applies to convalescence from dysentery, hepatitis being frequently produced in a similar manner, and appearing either alone or conjointly with a return of the dysenteric disease.

In many of the more chronic cases of hepatic dysentery, the bowel affection supervenes as a symptom of the morbid functions and organic changes of the liver consequent upon active disease. This result is most frequently observed to follow upon the organic changes of the liver described in the First Volume, particularly the different kinds of abscess there noticed. But, independently of being connected with those more remarkable structural changes, the dysenteric affection, especially in its more chronic states, is frequently conjoined with a torpid state of the hepatic functions, with an impaired and morbid secretion of bile, and with a more or less complete obstruction of this function. In short, it may be said of dysentery complicated with hepatic disease, that the dysenteric affection is found related to every form of disorder of the liver which we have passed in review, whether functional or structural; and that the more acute states of dysentery are generally connected with the more active affections of the liver, and the chronic affections of the bowels with organic changes of this organ, and an impaired, vitiated, or obstructed secretion of bile.

In those cases of chronic dysentery where the secretion of bile is much impaired or entirely obstructed, the process of chylification is very imperfectly performed, and the alimentary matters, during their passage through the

bowels, enter into combinations of an irritating nature, and, during their remora in the large bowels, occasion a morbid excitation of these viscera. But this topic will come more appropriately under consideration hereafter.

Dysentery supervening to disease of the liver constitutes the *first* form of complication mentioned by us. In cases of this description, the extent of disease is generally apparent, unless the primary affection of the liver, in which the dysenteric disorder originates, escapes the attention of the practitioner, or the patient has delayed to resort to medical aid before the bowel affection has taken place. In order, however, to ascertain this point, the medical man should inquire into the history of the case, and should look particularly for those signs which we have commented on in the First Volume, as characteristic of the different forms of inflammation of the internal structure of the liver :* having ascertained the presence or absence of these, the nature of the disorder will be evident. If those signs be present, the disease will generally assume features which we shall immediately have to describe.

In the *second* form of complication, viz. when the affection of the liver supervenes to dysentery, the affection of the bowels has generally been of a longer or shorter standing, and has commenced in the same manner as we have described the early stages of the simple dysentery; for as hepatic dysentery is nothing else than the complication of disease of the liver with disease of the bowels, the symptoms marking this complication cannot exist until both organs become affected. But as this association of morbid action is very frequent in warm climates, particularly in the East, the appearance of dysenteric symptoms should lead the practitioner to inquire attentively after disorder of the hepatic organs; and, if this disorder be not present, to prevent its supervention by the early employment of decided measures, and to watch for those signs which indicate its supervention.

When the complication of disease constituting hepatic dysentery takes place in a more immediate manner, or, in other words, when the affection

* See Vol. I. pp. 416 and 471.

of both organs is nearly coeval, many of the symptoms described in Volume First as characterising inflammation of the substance of the liver, will generally be observed, in addition to those already mentioned as pathognomonic of simple dysentery. In some cases, however, the hepatic disorder is very difficult of detection; and of the many signs by which it is characterised, but few perhaps may be present, and these may not always be such as can implicitly be relied upon. The observations already offered on the history of inflammations of the liver, if attentively studied, will assist the inexperienced in detecting the particular complication of disease now under consideration; and to these we must refer the reader, as introductory to a clear conception of the present subject. The cases also, particularly those detailed under the section on abscess of the liver, will be remarkably serviceable in this respect, and shew in what the chief difficulty consists. But every difficulty will, in a great measure, disappear before a determination on the part of the practitioner to ascertain, as far as may be in his power, the nature of each particular case which may come before him. Such zeal, such enthusiasm, in medical practice, will generally lead him to resort to every source of information, whether from books, clinical observations, or necroscopic research, and to study the relation of morbid phenomena with the internal lesions from whence they proceed.

In many cases of hepatic as well as of simple dysentery, the patient presents, for a day or two, many of the symptoms particularised in the section on the premonitory signs of disease contained in the First Volume of the Work, page 209. But this is not uniformly the case. The countenance is often pale, the skin cold, with horripilation, sickness, and loss of appetite, and a disordered, costive, and irritative state of the bowels. The patient often, at the same time, complains of a sense of chilliness, coldness or uneasiness in the back and lumbar region, running down the sacrum, sometimes as far as the anus, with griping pains through the abdomen. These symptoms, however, seldom fall under the observation of the practitioner, unless he makes it a duty to inquire particularly into the condition of the men under his charge during health; for it is not generally until the phenomena pathognomonic of simple or complicated dysentery are fully developed, that medical

advice is sought after. In those cases of hepatic dysentery in which the complication is immediate, or disease nearly coeval in both organs, the premonitory signs now noticed are often well marked, the griping pains extend through the abdomen and hypochondria, and are sometimes attended with vomiting, a sense of fulness and oppression at the præcordia, lowness of spirits, and slight dyspnœa.

At the commencement of this particular form of the disease, and generally following the above symptoms, the alvine dejections become frequent, and at first are usually copious, but morbid, both in colour, consistence, and odour. At this period they are very seldom either mucous or bloody, but they are generally very dark, crude, and offensive. As the disease advances, they vary daily, but are generally green, bottle-green, greenish brown or black, mixed with venous blood; sometimes slimy and watery, with a greenish frothy slime on the surface; rarely clay-coloured, and not infrequently, especially in the advanced stage of the worst cases, reddish brown, ochre-like, or consisting chiefly of water, with blood more or less intimately diffused through it. The motions vary in frequency and in character, according to the stage of the disease and the treatment adopted. There is generally urgent tenesmus present, with scalding of the anus, and often *prolapsus ani*. The calls to stool are more frequent during the night, and attended with more or less irritative fever and restlessness. Sometimes the blood is so very intimately mixed with the other matters forming the alvine evacuations, that it must have proceeded either from the superior portions of the alimentary canal, or from the liver itself. But this is an appearance observed chiefly in the far advanced stage of the disease, when also the evacuations often resemble the washings of raw meat, and present nearly similar characters to those marking the last period of the simple form of the disease. The urine is generally in very small quantity, high-coloured, muddy, and evacuated usually with pain and difficulty.

In addition to this state of the alvine excretions, the patient generally complains of a fixed pain, weight, or uneasiness, in the pit of the stomach, increased on pressure, and frequently extending to the right hypochondrium,

and beneath the right scapulum. There are usually also present tension, and a sense of pressure at the hypochondrium, with anxiety at the præcordia, fits of dyspnœa, occasionally pain in the right shoulder, or in the chest, with a dry, teasing cough, headach, giddiness, sickness at stomach, sometimes vomiting, and great depression of spirits. The pulse is generally accelerated and irritable, especially towards night.

The appearance of the tongue is various in different stages of the disease, and in different cases: in the early stages it is generally white, excited, and covered with a yellowish fur. As the disease advances, the tongue either becomes dry, clean, smooth, red, and lobulated, or excited, dry, and covered at the root particularly with a dark crust. The skin is sometimes dry, harsh, and of a dirty appearance; occasionally it is covered with a greasy perspiration, and copious sweats often occur through the advanced periods of the disease. There are also frequent thirst, and great desire of cold fluids. In other respects, the progress of hepatic dysentery is much the same as the simple form of disease already described; but it presents, in general, a greater range or variety of phenomena in different cases, and even in the same case, in different stages of the malady.

When the dysentery commences in the simple form already noticed, and after continuing in this form for several days at last draws the liver into a state of disease, the symptoms referrible to this viscus often are very obscure, and require much knowledge and attentive observation on the part of the practitioner to detect them. The tongue becomes dry, excited, and sometimes encrusted with a dark fur; the pulse irritable and quick; the patient is very despondent and restless, especially during the night; the stools are continually changing their appearance, being sometimes green, slimy, and streaked with blood; at other times pale, clay-coloured, and yeasty, and, as the disease advances, of an ochrey appearance, or of a reddish-brown colour, as if intimately mixed with blood, which had either passed from the extreme capillaries of the liver into the biliary ducts, or from the mucous surface of the small intestines. In cases of this description, the functions of the liver are greatly impaired as well as vitiated, and the vital energy of the organ in a great measure gone.

In hepatic dysentery the pulse is sometimes irregular and even intermitting, and occasionally it betrays but little derangement until evening, when it is sharper and more accelerated. The countenance, besides being expressive of suffering, and extremely anxious, is sometimes apparently deficient in life, and the animal heat below the natural standard. This is particularly observable in second attacks of this form of dysentery, which are always very dangerous. The anxious expression of the countenance is frequently great, when the state of the pulse is but little different from that of health. When this is the case, the appearance of the countenance is more to be confided in, as truly evincing the state of disorder, than the pulse, which, even in the worst cases, often indicates, particularly in respect of frequency, but little danger up to the last stage of existence.

In the more chronic examples of the hepatic dysentery, especially in those connected with abscess of the liver, the purulent matter not infrequently finds its way into the alimentary canal, from adhesions of the inflamed surface of the liver to some part of the tube, or through the medium of the ducts, as illustrated in the cases detailed under the head of Abscess of the Liver, in the First Volume. In such cases, the purulent discharge will readily be detected in the evacuations, if the attention of the practitioner be directed to the subject; and this circumstance, with the phenomena relating to it, as already described in the First Volume, will farther elucidate the particular nature and extent of disease. Abscess of the liver, however, may discharge itself into the alimentary canal, and yet escape notice, from the attention of the medical man not being directed to this occurrence, or to the intimate admixture of the matter discharged from the abscess with the contents of the bowels rendering the detection of it in the motions more difficult.

The symptoms of the chronic forms of hepatic dysentery are more mild: tormina and tenesmus are not severe, if at all complained of. Little or no pain is felt, even upon pressure, in the course of the colon; but the alvine evacuations are always more or less unnatural, and present appearances either of a morbid state of the bile, or of a deficient or obstructed secretion of this fluid. The calls to stool are also not so frequent as in the acute cases; but there are present great debility, depression of spirits, and

sinking of the powers of life, particularly in those who have been addicted to intoxication.

In cases of hepatic dysentery, a dirty appearance of the skin, sallow cast of countenance, attended with an expression of anxiety and great depression of the spirits, are very generally present, and may often be relied upon as evincing disease of the liver, even although pain, weight, and tension at the epigastrium, præcordia, right thorax, and hypochondrium, may be wanting. The presence, however, of these latter signs, in addition to the former, and to the symptoms described as characterising the progress of simple dysentery, is distinctive of the associated disease of both organs.

In respect of the symptoms marking the usual *terminations*, or most remarkable organic changes, of the complicated dysentery, we have nothing farther to offer than what we have stated in the previous section, and in the sections on Diseases of the Liver, contained in the First Volume. Hepatic dysentery, besides terminating in a similar manner to simple dysentery, often terminates in abscess of the liver, as well as occasionally originates in it. The phenomena characterising this occurrence have been already fully detailed; but when abscess takes place from disease of the substance of the liver, consequent upon dysentery, its supervention is generally obscure, and often escapes detection altogether until the purulent matter is observed in the dejections, or discovered by *post-mortem* examination.

In addition to the different *terminations*, therefore, of the simple dysentery already described, the complicated form of disease under consideration presents also the usual appearances of morbid structure of the liver, especially abscess, and lesions of a chronic kind. The signs characteristic of the terminations of simple dysentery mark the supervention of similar changes in the complicated affection also, and are equally to be confided in as a basis of *prognosis* as to the issue of the disease. In short, the practitioner must deduce his prognosis from his knowledge of the phenomena characteristic of the progress and terminations both of hepatic disease and of the simple form of dysentery, and from the manner in which the symptoms of the one affection are associated with those of the other. The signs marking the

progress and terminations of both affections are already before the reader: it will be his duty to watch them carefully, and to form his opinion from their nature and relations, remembering always that the unfavourable symptoms of the one affection are to be considered as being still more unfavourable if associated with similar phenomena of the other; and more especially if both the series of local signs are attended with urgent symptoms of constitutional disturbance and sinking of the powers of life.

CASE CLXXX. — *Acute Dysentery supervening to chronic structural Disease of the Liver after Intoxication. — Examination after Death.*

JOHN MICKEM, ætat. 24, admitted 19th of May, 1817, at Hyderabad, is of a phlegmatic temperament, and addicted to intoxication. Complains of pain of the belly; passes blood in his stools, with a considerable quantity of mucus and some feculent matter; pulse quick and full; skin rather cold; tongue foul and dry; has been drinking, ever since he arrived at Hyderabad, a liquor made of date, toddy, stramonium, and other intoxicating drugs, very common in this place, and highly deleterious. — Appl. hirud. xxx. parti regionis dolenti abdom. Habeat submur. hydrarg. ʒj. stat. necnon. injiciatur enema purgans.

20th. — Much easier this morning; stools dark-green bile; pulse much improved. — Habeat mist. purg. ʒjv. necnon enema purg.

Evening. — Stools morbid, very bilious; tongue clean; says he has no pain, but the pulse is quick and accelerated. — Repet. submur. hydrarg. ʒj. h. s. Foveatur abdom. Injiciatur enema emolliens stat.

21st. — Stools copious, with dark-green, feculent matter, and some black, coagulated blood; tongue foul and covered with a dark mucus; pulse quick, sharp; declares that he has no pain of any kind. — Habeat mist. purg. Enema ut antea.

Evening. — Passes nothing but black blood; pulse quick; complains of tenesmus; tongue foul and dry; great thirst. — Repet. submur. hydrarg. ut antea. Descendat in balneum tepidum quàm primùm.

22d. — Stools this morning watery, copious, of a deep-black colour, with some fæces; pulse strong and frequent; he is evidently losing ground. — Appl. regioni umbil. emplast. lyttæ amplum. Repet. mist. purg. et enema. R Mist. salin. ʒbj.; vin. antim. ʒss.; spirit. æther. nitros. ʒss. M. ft. mist. cujus capiat cyathus vinosus secundâ quâque horâ.

Evening. — Had retchings, but no bile was ejected; pulse hurried and quick, but rather indicating irritation than inflammation; does not complain of any pain;

the blister has risen well; stools the same as in the morning. — Repet. submur. hydrarg. ut antea. Cont. mist. salin.

23d. — Stools bloody, watery, exceedingly offensive, no fæces; tongue continues foul; skin moist; the saline mixture makes him sick; has no pain in the belly even on pressure, nor is there any fulness or tension; pulse frequent. — Enema decoct. rad. ipecac. stat. Omit. mist. salin. R Pilul. hydrarg. cum ipecac. ter in die.

Evening. — Pulse quick and small; tongue cleaner; evacuations unaltered; no fæces; blister discharges well. — Cont. med.

24th. — Getting worse every hour; no fæces passed; stools consist of blood and water, very offensive; tongue clean; pulse 120, weak. — Cont. enema et pilul.

Evening. — Complains this evening of a sharp pain in the iliac region, immediately over the cæcum; stools unaltered; pulse so quick that it cannot be numbered; he is sinking. — Appl. parti affect. hirud. x. Cont. ut antea.

25th. — Has very distressing singultus this morning; stools watery, of a brown colour, without fæces or blood, putrid, offensive; pulse nearly gone; the pain is relieved by the leeches; has some fulness at the scrobiculus cordis and right hypochondrium, but no pain on pressure; the pupils of the eyes are dilated. Medicine can have no effect. A cold sweat came on about noon, he became insensible, and died at eight o'clock, P.M.

Examination after Death. — The small intestines were very much inflated, and of a much darker colour than they should be. The transverse arch of the colon, and the whole gut, from the cæcum to the sigmoid flexure, was wrapped up in a solid mass of fat, formed by the omentum, which alone prevented the contents of the bowel from escaping into the abdomen; it likewise produced a stricture, not only on the colon, but on a part of the intestinum ilium. A considerable quantity of a green fluid, with a mixture of coagulated lymph, was found in the cavity of the abdomen; and layers of coagulated lymph between the folds of the small intestines, gluing them together. On removing the small intestines, to examine the state of the rectum, we found the lower part of the ilium, for nearly two feet, in a high state of inflammation, covered externally with thick layers of coagulated lymph, which attached it firmly to the rectum. There was also a considerable quantity of pus-like matter floating in the pelvis, as if some abscess had broken, or the contents of the intestines had passed through. We removed the rectum close to the anus, and found about three inches of the gut, near the anus, perfectly cartilaginous; and thence to the sigmoid flexure there were deep ulcers, with cartilaginous edges: the remaining part of the gut to the cæcum was also in a state of ulceration. The liver was large, of a deep-black colour, firmly attached to the cæcum and head of the colon, and studded with white, hard,

tubercular formations, but there was no abscess. The stomach was much inflated, and also of a darker colour than usual; indeed, there appeared to be a very considerable degree of venous congestion throughout the whole abdominal viscera.

Remarks.—The structural disease of the liver in this case must have been the result of long-continued disorder, most probably depending upon the habits of the individual. When the functions and structure of the liver are deranged, dysentery very readily supervenes to fits of intoxication, and is then particularly difficult of cure. The attack in this case was uncommonly severe, owing to the nature of the intoxicating liquor which excited it, and the exposure to the night air, &c. consequent upon the state of intoxication. Generally speaking, habitual drunkards cannot bear large depletions; and the diseases proceeding from intoxication require less copious blood-letting than those supervening in persons of regular habits and previously of healthy frames. Owing to these considerations, vascular depletion was not carried farther than is stated in the report of the first day of treatment, until the patient complained of pain in the region of the cæcum. At that time we entertained no hopes of his recovery, and looked upon the local depletion as the only means likely to produce a beneficial change. The almost cartilaginous state of the parts surrounding the ulcerations in the rectum and sigmoid flexure of the colon, observed upon dissection, leads us to conclude that this man must have had dysenteric symptoms, of a chronic kind, for a considerable time before he came into hospital, and that the intoxications preceding his admission had superinduced acute disease, and extended the inflammatory action to the external coats of the bowel, to the peritoneum, and omentum, and thus occasioned the appearances observed upon the *post-mortem* examination.

CASE CLXXXI. — *Dysentery associated with organic Disease of the Liver.*

JOHN DAY, admitted 23d May, 1817, at Hyderabad, in the morning, with pain in his belly and purging; tongue foul; pulse quick. — Apply twenty-six leeches to the belly. Mist. purg. ℥jv. stat.

Evening. — Feels much better since the leeches were applied; his tongue is foul; stools bilious, and full of hardened fæces; pulse quick and small; a good deal of pain in the epigastric region. — Calomel. gr. xx.; and apply twenty-six more leeches to the stomach.

24th. — Much better this morning; pain nearly gone; feels sickness at stomach; tongue foul in the centre. — Mist. purg. ℥jv. stat.

Evening. — Better. — Pilul. hydrarg. gr. v. h. s.; et haust. amar. cum sennâ.

25th. — Motions small, watery; no pain; some straining; tongue foul, with bitter taste in the mouth. — Pulv. purg.

Evening. — Stools feculent, with mucus; tongue cleaner; straining as before; has still a bitter taste in his mouth. — Calomel. gr. xij. h. s. s.

26th. — Tongue still foul; bitter taste in his mouth continues, and he feels inclined to vomit, but cannot; his motions are natural. — Mist. emet. stat.

Evening. — The vomit did not bring up much bile; he feels better; his stools are bloody, with mucus; no fæces; no pain in his belly. — Pilul. hydrarg. no. 1. Haust. amar. cum sennâ.

27th. — Had a good deal of straining in the night; the stools are watery, with blood; has some pain at the scrobiculus cordis; his tongue is foul and yellow; pulse frequent, but not an inflammatory pulse. — Pulv. purg. Enema ipecac. Pilul. hydrarg. cum pulv. ipecac. no. 1. four times a day. Apply a blister to the scrobiculus cordis.

Evening. — Stools more of a natural appearance, and no blood; tongue yellow in the centre; pulse frequent, as in the morning; finds ease from the blister. — Repet. pilul. ut suprâ, et haust. amar. cum sennâ, 3ij.

28th. — Tongue still foul, with a yellow crust; his stools are watery, with blood, but not offensive; says he has no pain at all; pulse quick and small, evidently the pulse of irritation; still complains of bitter taste in his mouth. — Cont. ut antea. Enema ipecac. Sago for diet; and rub in 3j. unguent. mercur. over the belly three times a day.

Evening. — Has passed some natural fæces; some straining, but not so much as yesterday; tongue clean; feels very weak; pulse full and soft, 98 in a minute; has no bitter taste in his mouth. — Cont. omnia.

29th. — A good deal strained in the night; stools watery and bloody; mouth sore, but no ptyalism; no pain in his belly; feels some pain in the rectum; tongue yellow and foul; pulse small, 110 in a minute; he has sickness at stomach. — Calom. gr. xx.; opii puri, gr. ij. stat. Cont. frictio et med. Apply sixteen leeches to the sacrum, and fomentations to the anus.

Evening. — Stools copious, watery, and bloody, with small pieces of formed fæces floating in them; the straining is less; the tongue cleaner; retched a good deal this afternoon, but brought up nothing bitter; pulse quick. — Cont. ut antea.

Ten o'Clock, P. M. — He is just seized with violent pain all over his belly. — Apply twenty-four leeches immediately, and a warm bath. Calomel. gr. xx.; opii, gr. ij. stat. post balneum.

30th. — Was much relieved by the bath last night, but the pain across the umbilicus returned again in the night, and was very severe; the leeches bled freely, and the blister is discharging well, yet the pain still continues; pulse rather hard and frequent,

but it is the pulse of irritation; tongue foul, and rather dry; stools pure blood and water, very offensive; no fæces at all. — Ol. ricini, ℥j. immediately. Enema ipecac. et pilul. hydrarg. cum ipecac. et opio, every four hours. Cont. frictio, et foment.

Evening. — Stools more feculent, but lax; no blood; has less straining; pain less; tongue moist, but foul; pulse frequent, 110. — Repet. pilul. ut antea.

31st. — Passed a better night than usual; has no pain, and had less straining; passed feculent matter in his stools, and less blood; tongue moist, but covered with yellow slime; pulse 110; heat of skin not increased; thinks the opium excites him too much. — Ol. ricini, ℥j. Cont. pilul. sine opio. Cont. frictio, enema, and sago diet.

Evening. — Stools are watery, but coloured with hepatic bile; very little blood; has strained a good deal all day; no pain or fulness in the belly at all; tongue cleaner and moister; skin natural temperature. — Cont. pilul., frictio, fomentationes, &c.

June 1st. — Stools this morning very offensive, but marked with bile, and no blood; tongue foul and yellow; has great thirst; pulse 110, not full, but irregular; no pain in the lower part of his belly; the straining is diminished, but he was attacked with violent pain at the scrobiculus cordis in the night, which still continues; no sickness; perspires very freely; the pain is directly under the ensiform cartilage. — Apply twenty leeches. Cont. frictio. Repet. pilul. ut antea. Repet. ol. ricini, ℥j.

Evening. — Has passed three large pieces of the mucous membrane of the intestines; the pain was not relieved after the leeches this morning; twenty more were applied, and he felt some ease, but it was very trifling indeed; the stools are marked with bile, and there certainly is not so much blood in them, but he is in other respects worse; his skin is cold and clammy; pulse hardly to be felt; his tongue is cleaner; there is now considerable fulness over the liver; says his mouth is very tender, but he does not spit; has hiccup. — R Opii puri, gr. jx.; calomel. gr. xvij.; syrup. q. s. Ft. pilul. no. 4.; sumat unam omnibus bihoris. Rub in as before. Warm wine, ℥ij.

2d. — Stools dark and black, with coagulated blood and some membranous matter; pulse hardly perceptible; skin cool, but no cold sweat; tongue the same; says he feels his gums sore, but there is no ptyalism; he still complains of pain in his side. — R Tinct. opii, ℥lx.; aquæ ammon. ℥xx.; aquæ puræ, ℥ij. M. stat. Sago and wine.

Died at eleven o'clock, P.M.

Post-Mortem Examination. — The liver was much enlarged, and there were three distinct abscesses in the right lobe; two near the convex surface, and a large one in the concave surface of the organ. There was a fourth abscess in the left lobe. The abscess in the concave surface had broken, and its contents flowed into the abdomen. The rectum and sigmoid flexure of the colon were very much contracted; the cæcum ulcerated, and the mucous membrane laying in a loose slough. The rectum was

ulcerated, and about four inches of the internal coat had been detached, and passed by stool. The small intestines were much thickened, and whiter than natural. The heart was enlarged, and there were white spots upon the right ventricle.

Remarks.—The dysenteric symptoms were considered as being associated with disease of the liver in this case, from the habits of the patient, the evident exciting cause of the disease, the state of the evacuations and of the tongue, and the irritable and irregular action of the heart. There were, however, no appearances of enlargement of the liver, nor was pain complained of upon examination until towards the close of the disease. With these views, mercurial action was attempted to be excited as quickly as possible, but no effect beyond a tender state of the gums was induced,—a proof, amongst others, that abscess had formed in the liver.

This man was admitted into hospital, with many other severe cases of dysentery, after coming off a long and very harassing march, and arriving at a station where the means of intoxication were most abundant, — circumstances calculated to produce dysentery in its severest forms.

CASE CLXXXII. — *Associated Disease of the Liver and Large Bowels.*

WILLIAM CARR, admitted 24th December, 1815: pulse 96; skin warm; tongue white in the centre; appetite impaired; stools orange-coloured; he complains of pain in the umbilical region, and of general debility; he had a dose of castor oil this morning, which operated well. — *Adhibeantur parti abdominis dolenti hirud. xvj. quàm primùm. Habeat hydrarg. submur. gr. x. horâ somni.*

25th. — The pain ceased after the application of the leeches; pulse 96; skin warm and moist; tongue of a shining white appearance in the middle; stools quite feculent and liquid. — *R. Ol. ricini, ℥ij. in aquæ menth. pip. ℥ij. Injiciatur enema purg.*

Evening. — Pulse 89; skin warm and moist; tongue white; stools light-coloured. *Habeat hydrarg. submur. Ḑss. h. s. Capiat mist. salin. ℥ij. secundâ quâque horâ.*

26th. — Pulse 84; skin warm and moist; tongue white in the centre; stools copious and feculent; he complains of headach. — *Repet. mist. ex ol. ricini. Cont. mist. salin. cum vin. antim.*

Evening. — Pulse 96; skin hot, but moist; tongue white; stools frequent, feculent; the extremity of the rectum is very tender; no tenesmus. — *Repet. hydr. submur. Ḑss. Injiciatur enema purg. stat. Cont. mist. salin. ut heri præscripta.*

27th. — He vomited a good deal in the night, after which he was seized with shivering, followed by heat and sweating; stools copious, liquid, and yellow; pulse 84; skin warm; tongue white. — *Injiciatur enema emol. stat. Cont. mist. salin.*

Evening. — Four stools without any griping or tenesmus; pulse 96, not hard; skin is cool; tongue white, as usual; thirst; uneasiness about the anus continues. — Habeat hydrarg. submur. gr. viij. stat. Cont. mist. salin.

28th. — He had another cold fit last evening, followed by heat and sweating, which continued till morning; pulse 84; skin cool and moist; tongue yellowish; thirst less; stools feculent. — Habeat pulv. purg. Cont. mist. salin.

29th. — He was feverish at night as usual; pulse about 78, soft and full; skin cool; tongue moist, rather yellow; thirst little during the day; stools more feculent; passed without uneasiness; he feels at present quite well. — Habeat pulv. purg. Cont. mist. salin.

Evening. — Stools copious, feculent; skin cool; tongue pretty clean; thirst inconsiderable; no uneasiness whatever at the time of his dejections. — Cont. mist. salin. R Tinct. opii, m̄xl.; aquæ puræ, ʒj. Ft. haust. adveniente frigore sumendus.

30th. — He became very easy after the draught; pulse 84; skin cool; tongue cleaner; appetite continues to improve; stools tinged with blood; he has had a slight fit of shivering. — Continuetur mist. salin. R Magnes. sulphat. ʒiij.; aquæ puræ, ʒx. Fiat solutio, quàm primùm sumend.

Evening. — Stools copious, tenacious, light-coloured; pulse 89; skin warm and moist; tongue cleaner than usual. — Cont. mist. salin. cujus libræ cuique addita vin. antim. ʒss.

31st. — Pulse 84; skin warm and moist; tongue a little furred; stools are yellowish, and tinged with blood; the bowels have been painful to-day; had some shivering in the night. — Cont. mist. salin. Habeat hydrarg. submur. gr. x. horâ somni. Injiciatur enema emolliens.

July 1st. — Pulse 76; skin warmer than usual; tongue yellowish and moist; stools feculent, with a reddish slime on the surface; the griping continued in the night, but without tenesmus; he complains of pain along the course of the colon from pressure; last night the shivering returned. — Cont. mist. salin. Habeat pulv. purg. stat. Adhibeantur parti abdominis dolenti hirud. xx.

Evening. — The leeches drew well; pulse 96, small; tongue pretty clean, yellowish; stools dark-green, and mixed with mucus; he complains of uneasiness of the belly. — Cont. mist. salin. Habeat hydrarg. submur. gr. x. Adhibeatur enema emolliens.

2d. — Pulse 84; skin warm; tongue yellowish, but moist; stools dark, slimy, yellow, tinged with blood; bowels easier; he had some shivering in the night, not followed by heat or sweating. — Cont. mist. salin. Repet. pulv. purgans. Habeat hydrarg. submur. gr. x.

3d. — Pulse 84, soft; skin natural; tongue pretty clean, of a yellowish hue; stools

more feculent, but slimy, and of a dark-green colour; bowels are easy; he was pretty easy during the night, but he had cold shivering about 9 P.M., which lasted an hour; it was not followed either by heat or sweating; gums tender.—Habeat mist. purg. ℥iij. Cont. mist. salin. Habeat hydrarg. submur. gr. x. horâ somni.

4th.—Pulse 84; skin warm; tongue moist as usual; stools more natural, still dark-green; no pain of the abdomen; at 9 P.M. the rigor, without heat or sweating, returned, at which time he vomited a good deal; he afterwards passed the night pretty well.—Habeat pulv. purg. Cont. mist. salin.

5th.—Pulse 89; skin warm; tongue yellow; sore mouth; stools more natural; he feels much better; no shivering last night.—Contin. mist. salin. R Magnesiae sulph. ℥iij.; aquæ puræ, ℥x. Fiat solutio, quàm primùm sumenda.

6th.—Mouth ulcerated; tongue yellow; stools pretty natural; skin hot; pulse 89.—Cont. mist. salin. R Magnesiae sulph. ℥iij.; aquæ puræ, ℥x. Fiat solutio, cras mane sumenda.

7th.—Pulse 96; skin warm; mouth sore; stools copious, slimy, mixed with glairy mucus and white membrane-like films.—Omit. mist. salin. Habeat hydrarg. submur. gr. x. horâ somni.

8th.—Stools green, fetid, mucous, and tinged with blood; pulse 89; skin warm; mouth continues ulcerated; pain of the belly very slight.—Habeat pulv. purg. stat. R Tinct. opii, ℥xl.; aquæ puræ, ℥jss. Sit haustus, nocte sumendus.

9th.—He slept pretty well after the draught; pulse 100; skin hot; abdomen rather harder than usual; copious salivation; stools pretty natural and without slime; when pressure is made on the abdomen, he complains a little of pain; he is now rather irritable from the soreness of the mouth.—Habeat pulv. purg. stat.

Evening.—Copious evacuations from the medicine; pulse 96; skin hot; mouth less sore; tongue loaded with yellow, viscid saliva in the middle; thirst moderate; stools dark yellow; he has had some griping, but now feels easy.—Habeat hydrarg. submur. gr. x. horâ somni.

10th.—Pulse 89; skin rather hot; mouth very sore; stools copious, dark green; he has had much griping and uneasiness.—Repet. pulv. purg. Adhibeatur parti abdominis dolenti emplastrum lyttæ amplum.

Evening.—The blistered part rose well; pulse 100; skin less hot; mouth still sore; stools green, mucous, very fetid; griping less; he seems very irritable.—R Massæ pilul. hydrarg. gr. vj.; pulv. ipecac. gr. iv.; opii, gr. ss. Fiat pilul. duæ, quarum una statim, altera post horam, sumenda.

11th.—The second pill caused sickness of stomach; pulse 90; skin cooler than usual; tongue yellow; stools feculent, very fetid, and tinged with blood; no griping

nor tenesmus. — Repet. pilul. heri præscripta, quarum tres capiat in die. Fricet abdomen unguenti hydrarg. mitioris, ʒj. bis in die.

12th. — Pulse 90; skin cool; slight tension of the belly; tongue furred; stools dark yellow, mixed with mucus and blood; frequent tenesmus. — Omit. frictio. Cont. pilul. Injiciatur enema emolliens.

Evening. — The pills produced nausea; pulse 108; skin warm; abdomen tumid; tongue yellow and moist; stools mucous and bloody; he has been very uneasy to-day; pain along the course of the colon. — Omit. pilul. Habeat pulv. purg. Adhibeantur parti abdominis dolenti hirudines xx.

13th. — The application of the leeches gave only temporary relief, but he slept a little in the night; pulse about 108, feeble; skin cool; countenance sharpened; tongue yellow; stools scanty, and similar to the sediment of coffee; the pain of the abdomen is more moderate, but he appears to be sinking. — Descendat in balneum tepidum.

Evening. — He was a little easier after bathing, but he soon became worse, and vomited incessantly a viscid matter resembling inspissated bile; at ten o'clock he had ten grains of calomel, after which he slept a little; pulse 116; skin warm; tongue loaded with yellow mucus; stools mucous and bloody, less frequent; pain of the belly moderate; some degree of tension and swelling of the abdomen; he is more comfortable than in the morning, but has some disposition to singultus. — R Mist. camph. ʒjss.; tinct. opii, mxxv. Sit haust. stat. sumend.

14th. — The draught and pill were repeated; he has been pretty easy during the night; pulse flagging; skin covered with a clammy moisture; features sunk; tongue more dry; vomiting less severe; stools liquid, and of a dark appearance; singultus; the pain of the belly seems to have in a great measure subsided. — Repet. haust. heri præscriptus horis secundis.

Evening. — He has taken three draughts in the course of the day, without any evident advantage; pulse the same as in the morning; countenance more Hippocratic; abdomen tense and tumid; tongue covered with dark mucus; stools scanty, resembling chocolate; singultus occasionally; no pain. — Cont. haust.

15th. — Pulse 120, very feeble; the countenance continues sunk, and the abdomen tense and swollen; tongue loaded; vomiting frequent and distressing; stools watery and dark-coloured; singultus; he makes little complaint. — Repet. haust. tertiâ quâque horâ. — He died at 10 o'clock, P.M.

Examination. — The liver was enlarged; and the whole surface of the right lobe was of a purple colour, except a small portion on its convex side, near the diaphragm, where a cyst was found, containing about two ounces of natural pus. The internal structure of the liver was not altered. The gall-bladder was full of yellow bile. The

omentum was livid, and much thickened throughout. The small intestines were perfectly sound and healthy. The colon, along its whole course, presented deranged structure. It adhered to the right lobe of the liver, and also in a very firm manner to the spleen. Its coats had lost their tenacity, and its internal surface was corrugated and hanging in shreds. The same state of disease appeared in the rectum. The other abdominal viscera were, in appearance, natural. The right lung adhered closely to the pleura costalis.—N.B. This man never complained of pain in the region of the liver, nor of the inconvenience which might have been expected to arise from the adhesion of the right lung to the costal pleura.

Remarks.—This case shews the manner in which associated disease of the liver and large bowels proceeds to the production of fatal organic changes. We have given the case as it stands in the hospital diary, as no abridgment of it can possibly convey an accurate idea of its symptoms and progress. The purulent collection was evidently forming at the time when the shivering fits were first complained of; and from this circumstance, and the symptoms complained of upon his admission into hospital, it is evident that disease was far advanced before he applied for medical aid—a circumstance of far too frequent occurrence in India.

CASE CLXXXIII.—*Dysentery, consequent upon, and becoming complicated with, diseased Liver.—Examination after Death.*

GEORGE LUSH, aged 29, artillery, came into hospital on the 11th of April, 1819, with active disease of the liver; for which, large local depletions and mercurial and other purgatives were employed. As considerable enlargement of the organ was manifest, the mercurials were pushed with the view of quickly inducing salivation. On the 1st of May the report was as follows:—His mouth is sore; there is no pain, but there appears to be a considerable enlargement under the right ribs.—Aquæ Cheltenham. Poultice the part with the unguent. mercuriale spread on the poultices.

Evening.—Feels no pain; mouth very sore, but does not spit much; pulse 92.—Hydrarg. submur. ʒj.

2d.—Pulse 84; ptyalism increased; feels a weight and pain when he turns to or lies on the left side; the rising of the right ribs does not appear so great as it was four days since; belly rather bound.—Repet. hydrarg. submur. h. s. Aquæ Cheltenham. cras mane.

3d.—Feels no pain; mouth sore.—Cont.—*Evening.* The tumour is decreasing fast; mouth very sore; ptyalism increasing.—Cont.

4th.—No pain at all; his bowels are rather bound.—Mist. purg. ʒiij.

5th. — Much griped by the medicines yesterday; pulse 82, good; tongue clean; no pains at all. — Cont.

Evening. — Had three or four stools of dark-green colour, with slight straining and griping; has severe headach; no pain in the side. — Calomel. gr. xx. h. s.

6th. — Pulse 88; has griping and pain in his head; no pain in the side; feels faint. — Enema purg. Magnes. vit. ℥ss. Aquæ puræ, ℔j. M.

Evening. — Much better, but feels sharp pain under the ribs on breathing. — Six leeches.

7th. — The leeches have relieved the pain under the ribs; there appears more fulness immediately on the epigastric region than is natural; pulse 78; ptyalism diminished, but the mouth is still affected; bowels painful. — Enema purg. Mist. purg. ℥ij.

Evening. — Pulse 84; no pain; feels great weakness. — R Decoct. cinchon. ℥xij.; tinct. cinchon. ℥ij.; acid. vitriol. mxxv. M. ft. mist. a wine-glassful four or five times a day.

8th. — Had an injection, which brought away lumps of fæces; he is griped; pulse good. — Calomel. gr. x. Opii, gr. ij. h. s. s.

9th. — Was much disturbed in the night by griping in his bowels, which is relieved by an injection this morning; pulse 90; skin moist; tongue clean. — Cont. cort. Peruv. Repet. enema.

10th. — Was very much griped in the night and purged; we fear it is the bark; pulse 94; tongue clean. — Discont. the bark. Repet. poultice. Cont. pilul. ut antea.

Evening. — Has been much purged and griped; stools darker colour. — R Infus. amar. ℥xij.; infus. sennæ, ℥vj.; tinct. ejusdem, ℥j.; tinct. cardam. ℥ij. M. a wine-glassful night and morning. Repet. enema.

11th. — Complains very much of straining; his stools are blood and mucus; has pain all over his belly; pulse rather hard, 100; bad appetite; no pain in his side at all; mouth continues sore. — Apply ten leeches about the umbilicus. Ol. ricin. ℥jss.; aquæ menth. ℥ij.; enema purg. ℥ij.

Evening. — Pulse 104; the pain is rather easier, but not removed; he has been purged, and his stools are darker, but he now passes small lumps of slime with blood; he has straining; skin warm, not hot; tongue clean. — Calomel. gr. xij.; opii puri, gr. ij. h. s. s. Apply a blister over his belly where the pain is. Enema anodyn. h. s. s.

12th. — He passed a good night; the gnawing pain at the umbilicus is better; his pulse is still frequent; stools variegated and offensive; green, acrid-like matter, with mucus and blood. — Ol. ricin. ℥ij. statim sumend. Enema anodyn.

Evening. — Pulse very quick and rather full, 114; tongue clean; pain in his belly

rather better; stools variegated, morbid, green, and very tenacious, with some blood and mucus. — Calomel. gr. xx.; opii, gr. iij. Enema anodyn.

13th. — Had several stools last night, with great straining and griping; his stools are yellow, mixed with blood and mucus; pulse quick, rather full; skin cold; tongue clean; pain in the belly much better, but feels faint and weak. — R Ol. ricin. ℥ij.; aquæ menth. pip. ℥jss. M. ft. haust. stat. sumend. Enema anodyn. cum camph. ter die. Pilul. pulv. ipecac. gr. j. tertiâ horâ. Gum water. Repet. calomel. horâ somni.

Evening. — Passes urine more freely; stools free from blood, but blackish, with red masses of mucus floating in a yellow fluid; pain over the abdomen and sigmoid flexure of the colon; pulse rather hard, full, slightly accelerated. — Apply six leeches.

14th. — Pain in the lower part of his belly is much easier after the leeches; had four or five stools during the night, of a yellow and reddish colour; passes urine more freely; skin cool and moist; tongue clean; pulse good. — Cont. pilul. ipecac. Cont. enema. Gum water. Repet. calomel. h. s. Hirudines no. ij.

Three o'Clock, A.M. — Feels much easier; passed some stools of a rather dark colour; had a few hours' good rest; no pain in the belly.

15th. — Pulse 88, regular; has been slightly griped; has passed small pieces of membranous matter in his stools, which are of a brown colour; tongue rather dry, but clean; the leeches relieved him; the pain is gone. — Cont. pilul. ipecac. Cont. enema ut antea. R Acid. nitros. ℥ss.; sacchar. alb. ℥ss.; aquæ puræ, lbij. M. A wine-glassful frequently.

Evening. — The tumour in the region of the liver is quite removed; his bowels are very easy; no stools; the enema still remains with him. — Cont. ut antea.

16th. — Pulse 96; had no stool; was griped in the night; the enema remained all night; he is in a perspiration from the ipecacuanha. — Enema purg. Cont. acid.

Evening. — Stools copious, variegated and offensive; was griped; pulse 100; perspires as much as ever; tongue rather dry and smooth. — Liniment. opiat. to be applied over his belly. R Haust. anodyn. h. s. s.

17th. — Has been well purged this morning; stools feculent; of a greenish-black colour, and offensive; he passed a good night till two o'clock, has not slept much since; is now in a free, warm perspiration; pulse 98; tongue rather dry and red, but furred at the root. (This state of the tongue seems to indicate the existence of matter in the liver.) Feels relief from the use of the volatile liniment; thinks the nitric acid gripes him. — Cont. pilul. ipecac. ter in die sumend. Port wine in place of Madeira. Repet. enema.

Evening. — Had several stools by the clyster; griping and straining came on as

before; passed some slime, and green mucus, tinged with blood; skin cool and moist; pulse rather quick. — Repet. haust. anodyn. h. s. s.

18th.—Feels better; had two feculent stools, with some water; tongue better; pulse firm and better, 90; still perspires a good deal.—Pilul. ipecac. bis de die. Cont. enema.

Evening.—Feels much easier after the clyster; had two stools before he had the clyster, but none since; skin cool and moist; pulse rather quick; tongue clean; no griping pain in his belly. — Haust. anodyn. h. s.

19th.—Had a slight sleep in the night; no purging; had some feculent evacuations this morning.—R Decoct. cinchon. ʒij.; mist. acid. comp. ʒij. every six hours. Enema to be continued occasionally.

Evening.—Feels rather easier, but has frequent inclination to go to stool, and passed some green, watery fluid; griping still continues. — Cont. enema anodyn.

20th.—Slept well from twelve to four, A.M.; had no stools last night, but this morning was purged; six watery evacuations of a dark-brown colour; great perspiration on the face and head; pulse rather quick and soft; skin of a natural heat, but too moist; urine passes quite freely; tongue quite dry in the centre, near the tip with a peculiar bad appearance; complains of debility. — Cont. enema anodyn. Omit. pilul. ipecac.

Evening.—No alteration; had six stools since eleven o'clock, A.M., of watery and brown colour; perspiration on the head and face still continues; he always feels a slight griping pain in the lower part of his belly just before he goes to stool; no pain in the side; pulse quick; skin natural heat, but no moisture; tongue dry; complains of great debility. — R Ol. ricin. ʒj.; spirit. æther. vitriol. ʒj.; tinct. digitalis, mxxv.; tinct. opii, mvij.; aquæ menth. pip. ʒj. M. ft. haust. h. s. s.

21st.—Took the medicine last night and this morning; had an anodyne injection last night, but none this morning as yet; they make his head giddy; rested very well till one o'clock, and had no stool till four, since which he had a dozen evacuations, coming on so quick, he had scarce time to get up; has pain of the fundament only when passing a stool; urine is voided freely; a slight pain on pressing over the cæcum and sigmoid flexure; an aching pain in the anus, extending up the spine; no cough, or pain in the shoulder; general lassitude; stools dark brown, and with an appearance of a coarse green powder and small black pieces of the internal coat of the intestine; perspirations have gone off much; skin natural; tongue not so dry; pulse quick, soft, and full. — Three glasses of wine, as formerly.

Evening.—Had frequent stools since morning; pulse quick; skin dry; tongue not so dry; can only drink tea.

22d.—Pulse small and frequent; countenance altered; skin cool and moist; has

hiccup; tongue moist, but excited; stools bloody sanies; frequent griping pains; says the enema relieved him; the liver and the rectum appear now to be the parts which distress him. — Enema amyli, ℥jv.; opii, gr. vij.; aquæ puræ, ℥ij. ter de die injciend.

Evening. — Stools very bloody and watery, like the washings of salt meat; the enema has not done him any good; the disease seems to be chiefly in the lower part of the bowel; pulse quick, but smaller than formerly; tongue much cleaner. — R Tinct. opii, ℥lxxx.; spirit. æther. nitros. ℥xxx.; aquæ puræ, ℥ij. M. statim. Cont. enema amyli, ℥ij. at a time.

23d. — In a cold sweat; pulse very quick and irregular; tongue clean, and quite dry; no pain at all in his abdomen; stools pure blood, and offensive; hiccup very troublesome; is past recovery; not so much pain at the rectum. — Cont. enema amyli, ℥ij. R Ammon. præp. gr. iij.; opii, gr. j.; conf. aromat. q. s. Ft. pil. omni tertiâ horâ cap.

Evening. — Constant sickness; skin cold; wine and water remain on his stomach. — Haust. anodyn. Omit the pills.

24th. — Cold sweat; pulse small; stools bloody and very offensive; tongue clean and smooth; he is evidently sinking fast; the hiccup is troublesome. — Cont. vinum et coffee.

Evening. — Coffee he liked much; is sinking fast. — Cont. coffee.

Died at four o'clock this morning.

Sectio Cadaveris. — Evident marks of inflammation of the liver, which was rather larger than usual; but the inflammation had been apparently overcome. Adhesions of the superior convex surface to the diaphragm, which could not be separated but by the knife. A small distinct sac, filled with yellow purulent matter, was formed about the middle of the right lobe, and was not observed till several incisions were made into the liver to see if there was an abscess, when the knife entered this sac, which was quite distinct, and lined with a membranous coat. The left lobe of the liver was of a natural colour, rather paler than usual, but not altered in structure. The stomach and small intestines were pale and flaccid. The cæcum and colon were ulcerated throughout, — the latter elongated and somewhat displaced; and the rectum was one mass of ragged ulceration.

Remarks. — The dysenteric disorder seems to have proceeded in this case from the morbid state of the bile, resulting from the diseased state of the liver. It is by no means unlikely that an acrid condition of the biliary secretion should produce an erythematous inflammation of the bowels, or a state of irritation of their internal

surface, speedily running into inflammatory action and ulceration. From the corrugated appearance of the membranous cyst enclosing the purulent collection in the liver, it was manifest that the abscess had been of a much larger size, and that a part of its contents had been removed by absorption, after the supervention of the dysenteric symptoms. The subsidence of the tumefaction, which was evident in the right hypochondrium and epigastric region previous to and at the commencement of the dysenteric disorder, confirms this opinion.

Here it will be also observed, that the constitutional effects of mercury were induced with great difficulty, and that no advantage was derived from these effects. The ptyalism and affection of the mouth diminished as the dysenteric symptoms increased. The existence of matter in the liver was stated in the report of the 17th, and was inferred from the appearance of the tongue, the symptom which chiefly indicated it in this case.

CASE CLXXXIV. — *Dysentery associated with Abscess in the Liver, extending into the Lungs.*

— BINGHAM was admitted on the 20th May, 1806, with griping pain of the abdomen, bloody stools, considerable thirst, and pain in the right side: pulse 90; respiration natural. Mercurials, purgatives, and blisters, were prescribed. The dysenteric symptoms and pain of the side yielded on several occasions to the above measures, but as often returned. The hectic flush was observed in the evening for several weeks before his death, and an increase of the purging through the night, — symptoms frequently indicating the existence of abscess of the liver. His appetite was good to the last.

Upon *examination* after death, the colon was found covered externally with coagulable lymph, and adhering to adjoining parts. The internal surface was ulcerated and thickened. The liver was found adhering, through the whole extent of its convex surface, to the parts opposite. Upon tearing it from this attachment, an abscess was discovered in the superior part of the liver, the adhesions formed around it alone preventing the escape of the purulent matter into the abdomen. Near the suspensory ligament on the right side, an opening from the purulent collection had taken place in the diaphragm; and through this opening, which allowed the finger to pass, a great part of the matter formed in the liver had escaped into the right lung, which adhered very firmly, and to a considerable extent, to the diaphragm. The liver was not adherent to the stomach or to any part of the alimentary canal.

CASE CLXXXV. — *Associated Disease of the large Bowels and Liver.*

SERGEANT M'DONALD had been complaining for about a week of griping pain in the bowels, attended with purging, before he was received into hospital. On his admission, in September 1816, he had no pain in the abdomen, bore pressure without complaint, and his stools, which were mucous, bloody, and frequent, were not attended with tenesmus. He had, however, great sickness at stomach, prostration of strength, depression of spirits, with increase of fever and hot skin towards the evening. He had led a regular life, and did not complain of any pain in the region of the liver.

Upon *examination* after death, in addition to an ulcerated state of the cæcum and colon, a very large abscess existed in the right lobe of the liver, towards the concave surface.

CASE CLXXXVI. — *Co-existent Disease of the Liver and large Bowels, constituting a frequent Form of Hepatic Dysentery. — Post-Mortem Examination.*

CORPORAL MARTIN, Madras European Regiment, admitted on the morning of the 22d of April, 1820, into the Madras General Hospital, with griping and purging, attended with straining, but no tenesmus; tongue loaded; pulse small; skin natural; great thirst; appetite impaired; complaints of four days' standing.—R Mist. purg. ℥iij.; ol. menth. ℥iij. M. ft. haust. stat. sumend. Habeat enema oleos. stat. Spoon diet.

Evening.—Purged freely; stools green, and passed with less straining.—R Hydr. submur. gr. x.; opii puri, gr. j.; pulv. ipecac. gr. ij. M. ft. pilul. ij. h. s. s.

23d.—Frequent black-coloured stools, but not copious; free from straining; some griping; tongue foul; skin and pulse natural.—Sumat mist. purg. ℥iij. stat. Habeat enema purg. bis de die.

Evening.—Much better this evening.—Repet. pilul. ut suprâ, horâ somni.

24th.—Better; tongue foul; bowels open, and his stools are of a brown colour.—Sumat haust. purg. ut antea, stat.

Evening.—Purged frequently, and his stools are chiefly blood and slime, attended with griping; skin cool; pulse calm; tongue slightly loaded.—R Hydr. submur. gr. xx.; opii puri, gr. ij. M. ft. pilul. ij. h. s. s.

25th.—Four stools in the night, tenacious and offensive; no pain in his belly nor straining; tongue moist and clean; skin cool; pulse calm.—Sumat mist. purg. ℥ij. stat. Habeat enema purg.

26th.—Better; stools yellow; no straining nor pain in his belly; tongue furred;

pulse as before; took ten grains of submur. hydrarg. last evening. — Repet. haust. purg. stat.

Evening. — Seven stools, and dark-coloured; slight straining; no pain in his belly. R Pil. aloët. cum calom. no. 1. ter die. R Mist. amar. cum sennâ, ʒij. nocte maneque.

27th. — Tongue foul; stools light-coloured and offensive; says he feels quite easy in his bowels; pulse and skin natural. — Cont. med. Half diet.

28th. — Frequent light-coloured offensive stools since last evening; he feels no pain in his right side or belly, no fulness of either, nor pain on pressure; tongue furred; pulse and skin natural; gums tender. — Cont. med. Spoon diet.

29th. — Seven stools in the night, extremely offensive, and light-coloured; considerable thirst; tongue furred; pulse firm and pretty regular; skin of a natural heat; appetite impaired; gums tender. — Sago diet. Cont. med. ut antea.

Evening. — Four stools of the same appearance, and offensive; says he feels quite easy. — Cont. med.

30th. — Four stools since last evening, and still light-coloured; no pain in his belly nor straining; pulse good; skin cool; tongue furred; gums tender. — Cont. med.

May 1st. — One alvine evacuation only since last evening, copious, offensive; very little secretion of bile; tongue furred; pulse calm; skin natural, and says he is perfectly free from pain. — Cont. pilul. aloët. cum calom. ter die. Cont. haust. amar. cum sennâ, h. s.

2d. — Stools regular; tongue still furred; pulse good; skin cool and moist; gums tender. — Cont. med. Half diet.

3d and 4th. — Stools natural; tongue foul towards the root; says he is quite well. — Cont. med.

5th and 6th. — Purged a good deal in the night; no straining; no pain in his belly. — Cont. med. et add. ol. menth. mij. haust.

Nine o'Clock, A.M. — Attacked with considerable griping; stools watery. — Foment the abdomen. Habeat enema purg.

Evening. — Stools feculent and yellow; complains of pain and a sense of weight over the abdomen; pulse good; skin cool; tongue excited. — Appl. hirud. xvj. abdom. Repet. enema purg. stat. R Hydrarg. gr. xx.; opii puri, gr. ij. M. ft. pilul. h. s. s.

7th. — Says he feels much easier this morning; tongue foul; purged frequently since last report; stools yellow; no straining; pulse full and 76; thirst urgent; skin natural. — Sumat mist. purg. ʒij. stat. R Mist. salin. comp. ʒij. tertiâ quâque horâ.

8th. — Attacked with rigor about six o'clock this morning; at present (half-past six) in the cold fit; tongue furred and yellow; medicine purged him freely yesterday;

stools yellow; complains of no pain. — R Tinct. opii, ℥xx.; mist. camph. ℥jss. M. ft. haust. stat. sumend. Cont. mist. salin. ut antea.

Two o'Clock, P.M. — Seized with considerable pain in his head, and vertigo; pulse firm and good; skin cool; tongue excited. — Applicentur hirudines xiiij. temporibus. Cont. mist. salin.

Evening. — Head easier; stools morbid; free from fever. — R Hydr. submur. gr. x.; opii puri, gr. j.; cons. rosæ, q. s. M. ft. pilul. h. s. s. Cont. mist. salin. Spoon diet.

9th. — Stools feculent, and nearly natural; pulse calm; skin cool; tongue moist, and less excited; feels much better to-day. — Sumat mist. purg. ℥ij. stat. Cont. mist. salin. ut antea.

10th. — Stools copious and morbid; vomited bilious matters frequently in the night; tongue much excited, with considerable thirst; feels no sickness at present, but he is very chilly, and his mouth is quite clammy; skin warm, with very little moisture over it; pulse rather quick and full, but not hard or sharp. — R Mist. purg. ℥ij.; ol. menth. ℥iij. M. ft. haust. stat. sumend. Cont. mist. salin. secundâ quâque horâ, cum antim. tart. gr. ij. ad ℥ij. Habeat enema purg. Sago diet. Habeat potu acid. nitros. ad libitum.

Evening. — Seized with rigors at eight o'clock this morning, succeeded by heat; at present, skin cool and moist; pulse calm; tongue moist, and less excited this evening; stools dark-coloured, copious, and extremely offensive, attended at times with tenesmus and great straining; feels no pain in his bowels, nor headach; thirst not so severe; appetite impaired. — R Hydrarg. submur. ℥j.; opii puri, gr. ij. M. ft. pilul. ij. h. s. s. Appl. hirud. xv. ossi sacro.

11th. — Tenesmus much less, and he passed a pretty good night; stools bloody water; says he feels little or no pain in his belly; but there is some tension of abdomen, and it is rather hot to the hand; pulse 100, firm, but not sharp or hard; skin natural; tongue of a brown appearance, and furred, but moist; great thirst; has had no vomiting or sickness at stomach since he took his pills. — R Magnes. sulph. ℥ss.; infus. sennæ, ℥j.; gentian. ℥ij.; tinct. cardam. ℥ij. M. stat. Appl. hirud. xx. abdom. parti dolenti. Cont. mist. salin. ut heri præscripta. Cont. acid. potus. Sago diet. Cont. enema.

Evening. — Pulse 110. and soft; skin hot, but moist; pain in his bowels relieved; straining much less; had eight copious, offensive, morbid stools, and no appearance of blood this evening; tongue as at last report; thirst continues urgent. — R Pilul. aloët. cum calom. no. 1. quartis horis. R Mist. amar. cum sennâ, ℥iij.; magnes. sulph. ℥iij. M. cras primo mane sumend. Cont. mist. salin.; et enema, ut antea.

12th. — Twelve or fifteen stools in the night, of a very dark, watery appearance, and little or no feculent matter or blood, attended with considerable straining and tenesmus; he had an anodyne enema (ʒij.), but he could not retain it a moment; says he feels considerable scalding at his seat when he goes to the stool; no pain nor tension of abdomen; tongue moist, and less furred; pulse 76, and regular; skin natural; thirst very urgent: took his bitter draught with magnes. vitriol. — Repet. enema anodyn. pro re natâ. Appl. hirud. xv. ossi sacro. Cont. pilul. ut heri præscrip. et mist. salin. ut antea. Some tea to be given. The extremity of the rectum to be syringed with the following lotion:—R Tinct. opii, ʒss.; decoct. oryzæ, lbj. M. ft. lotio, sæpè utendum.

Evening. — Felt considerable relief from the lotion; stools dark and watery, with some tenacious matter floating in them; complains of no pain in his belly; straining and tenesmus much relieved; pulse calm; skin rather warm, but moist; no particular thirst, but he is rather restless, with anxiety. — Cont. lotio et med.

13th. — Stools bilious, and scald him considerably in passing them; pain at the extremity of the rectum very severe; says he had about twenty calls to stool since last report, evidently from acrid matters requiring to be removed; no pain nor tension of abdomen; tongue loaded, but moist; pulse 100, and soft; skin natural; thirst urgent; no appetite; gums not affected. — Cont. med. Utatur unguent. hydrarg. fort. ʒj. bis die. Cont. lotio. Tea as yesterday. Repet. enema anodyn. ʒij. tantum, quàm primùm.

Evening. — Says he has been pretty easy all day; stools rather watery, tinged with blood; tongue moist, and less excited; pulse as before; seat easier; straining much relieved; skin quite hot, with very little moisture; pulse 120, soft and firm, but not full or hard; great thirst; says he feels no pain any where. — Cont. omnia.

14th. — Stools feculent, and of a dark yellow colour; straining much less; pain in his seat easier; no pain nor tension of abdomen; tongue loaded and foul, but moist; thirst still urgent; pulse 110, soft; skin natural; he cannot keep any thing on his stomach; appetite much impaired. — Cont. pilul. aloët. cum calomel. ut antea. Sumat haust. salin. effervescen. pro re natâ. Cont. lotio.

Evening. — Has had about twenty calls to stool since morning; matters evacuated of a dark, watery appearance, and offensive; no straining, and no return of vomiting; pulse frequent and soft; skin natural; slight pain at the extremity of the rectum; says his belly is quite free from pain; tongue moist, but considerably loaded; thirst continues; great weakness. — Habeat enema anodyn. ʒij. quàm primùm. Cont. haust. salin. effervescen. R Pilul. hydrargyri, ʒj.; pulv. ipecac. ʒij.; opii puri, ʒj.; syrup.

simplicis, q. s. Ft. pilul. xx. sumat unam ter die. R Conf. aromat. ℥j.; spirit. lavend. comp. ℥ss.; tinct. opii, mxx.; mist. camph. ℥jss. M. stat. h. s. s. Foment the abdomen.

15th. — Says he had a tolerably good night till twelve o'clock, after which time he was very frequently at stool; motions pretty copious, of a dark-yellow colour, feculent, and extremely offensive; very little straining; pain in his seat easier; the uneasiness complained of last night in his bowels relieved; pulse 100, soft; skin natural; tongue cleaner; thirst continues; gums slightly swollen, but he feels no soreness in them; says he thinks he can take a little toast and wine this morning. — Cont. med. ut heri. Vin. ℥jv. in die.

Evening. — Ten stools since morning, of the same appearance, but less offensive; skin cool; pulse 120 and firm, but not hard or sharp; tongue moist; complains of considerable irritation at the extremity of the rectum, which occasions him, he says, to go so often to the stool; he feels much relief from the lotion. — Cont. omnia. Repet. enema anodyn. vespere, et haust. horâ somni. R Unguent. alb. ℥j.; opii puri, gr. xxv. M. ft. unguent. pro ano, sæpè utendum. Cont. lotio.

16th. — Frequent calls to stool since twelve o'clock last night; evacuations of a dark green colour, feculent, and scalded him considerably in passing them, attended with a great deal of straining and tenesmus; complains of great pain and uneasiness at the extremity of the rectum; pain also over the whole of the abdomen, but no particular tension; pulse 110, firm, but not full or hard; skin natural; tongue moist and less excited; great thirst. — Appl. hirud. xx. abdom., et vj. circum sedem. Repet. enema anodyn. stat. Cont. alia, ut heri. R Mist. salin. comp. ℥j. secundis horis sumend.

Evening. — Stools of a very dark-brown colour, feculent, and extremely offensive; says he felt much easier all day; pain in his belly relieved by the leeches; seat easier; very little straining; skin cold and moist; pulse 110, and pretty firm; tongue moist, but loaded; he took a glass of wine, but no other nourishment. — Cont. omnia.

May 17th. — Frequent brown, watery, offensive stools since last night, but passed with much more ease; pain at his seat better; no pain nor tension of abdomen; pulse 116 and small; skin cool and moist; tongue looks better; thirst continues; appetite much impaired; is troubled with cold sweats, and feels very weak occasionally; he took four ounces of wine and some tea yesterday, but no other nourishment; gums not affected. — Omit. pilul. et unguent. hydrarg. R Vin. alb. ℥ij.; aquæ tepid. ℥iij.; pulv. myrist. q. s. Ft. potus, pro re natâ. R Conf. aromat. ℥j.; decoct. cinchon. ℥jss.; tinct. ejusd. ℥j. M. ft. haust. ter in die cap. Repet. enema anodyn. si opus sit. Cont. mist. salin. ℥j. secundâ quâque horâ.

Evening. — Passed the day pretty well, but he is griped a little this evening; stools of the same appearance, with a little feculent matter, and less frequent; pulse 110 and small; skin cool and moist; tongue moist, but furred; says he feels some oppression in his breathing; thirst the same; took eight ounces of wine since last report, and a little custard; has had no enema, having been pretty easy. — *Habeat enema anodyn. vespere.* Foment the abdomen. *Cont. haust. cinchon. et vin. ut antea, necnon mist. salin.*

18th. — Five or six stools only in the night, not so dark-coloured, and less florid, with a little feculent matter; says he feels no pain, but is very weak; pulse 120 and pretty firm; skin natural; tongue clean and moist, but slightly furred; thirst still urgent; countenance looks rather better this morning; he complains of some uneasiness in his bowels before he goes to stool, and there is a slight degree of fulness across the umbilicus and hepatic region. — *Cont. alia, ut heri. Appl. cataplas. ampl. cum unguent. hydrarg. q. s. abdom. et regioni hepat.*

Evening. — Skin covered with a cold perspiration; pulse feeble; says he feels very easy this afternoon; stools watery and very foetid, and there is an offensive smell from his body; tongue moist, but clammy, and his thirst is very urgent; free from straining; says he feels much relief from the poultice. — *Cont. vin. et haust. cinchon. ut antea. Cont. cataplas.*

19th. — Stools of a brown colour, and very offensive, no appearance of blood, and passed without any straining; says he feels quite easy; skin of a natural heat this morning; pulse small and fluttering; tongue moist; mouth and teeth dry; thirst extremely urgent; he took six ounces of wine since yesterday morning, but no other nourishment; has this moment voided a large portion of sphacelated intestine; says he passed a large portion similar to the above in the night, which pained him a good deal in pulling it away. — *Cont. vin. ut antea, et haust. cinchon. Cont. cataplas. ampl. abdom. et mist. salin. compos. ut antea.*

Evening. — Six stools of a yellow, watery appearance, and not particularly offensive; has had frequent vomiting since last report; passed several more portions of sphacelated mucous coat of the bowels; feels no pain in his belly; pulse very small and frequent; tongue rather dry; skin of a natural heat. — *R Haust. salin. efferves. cum tinct. opii, ℥xx. stat. Cont. vin. R Mist. camph. ʒjss.; conf. aromat. ʒj.; tinct. lavend. comp. ʒss.; tinct. opii, ℥vj. M. ft. haust. quartis horis sumend.*

20th. — Three or four yellow, watery stools only in the night, and he passed one more slough from the intestine, and says he is perfectly free from pain; he had a pretty good night; pulse frequent and small, and cannot be counted; skin

rather cold; tongue, mouth, and teeth, dry, and covered with a brown crust; very thirsty; slight fulness of the abdomen; his stools are less offensive; feels great relief from the least draught; no return of the sickness or vomiting since last report; took no nourishment, with the exception of his medicine, since last evening; says he is extremely weak, and his countenance is much sunk. — Cont. haust. cinchon. ut heri præscript. Cont. vin. necnon cataplas. Mouth and teeth to be washed with a little acid and water. Cont. lotio pro ano. Habeat enema anodyn. ζ ij. Habeat haust. salin. efferves. pro re natâ.

Evening.— Stools as at last report, and voided several more pieces of slough from the intestine; tongue dry, and covered with a brown fur; great thirst; complains of no pain, but is a little strained; pulse very feeble and fluttering; skin of a natural heat; took no wine to-day, nor any nourishment; eyes considerably sunk in their orbits this evening, and he appears altogether much worse; cadaverous smell from his body. — Cont. omnia.

21st. — Skin covered with a cold sweat; pulse very small and irregular; tongue as yesterday; stools offensive and watery; says he feels easy; passed no more slough from the intestine since last report; eyes half open, and he is sinking fast. — Cont. vin. et haust. et adde æther. sulph. ζ ss.

Evening.— Stools chiefly bloody water, with some coagulated blood; pulse firmer, 120; skin cold; he feels a little griping; tongue of the same appearance; he took four ounces of wine to-day, but he is extremely weak, and appears sinking fast. — Foment the abdomen. Repet. enema anodyn. Cont. vin. et med. ut antea.

22d. — Stools extremely offensive, of a dark, watery appearance, having a quantity of black, coagulated blood; pulse 120 and pretty firm; skin cold; says he feels no pain in his belly; tongue not so dry as yesterday; teeth quite dry; eyes half open when he is asleep, and he is extremely weak, with a very fœtid smell from his body; begs to have a little warm wine and water. — Cont. vin. et haust. cinchon. Repet. enema pro re natâ. Cont. lotio.

Half-past Seven, A.M.— Passed this moment about a pound of coagulated blood, and perfectly black; continued to void the same in considerable quantities till eleven o'clock, A.M. when he expired.

On *examining* the body, four hours after death, the large intestine was found in a high state of disease, from the caput coli to the extremity of the rectum, and nearly ulcerated through its coats at the cæcum and sigmoid flexure of the colon. The liver was considerably enlarged, and studded with small and distinct abscesses, about the

size of peas, over the whole surface ; and on a section being made, its internal structure presented a similar appearance.

Remarks. — We have given this case fully in detail from the hospital diary, as an example of associated disease of the liver and large bowels from its commencement. It admits of but little observation. The natural state of the pulse, and the mildness of the symptoms, prevented so early an employment of vascular depletions as might have been serviceable in this case. Notwithstanding the absence of pain, even upon examination, either in the hepatic region or in that of the colon, the other symptoms, particularly the alvine evacuations, indicated serious disease of the liver and mucous surface of the large bowels, from the commencement.

SECTION III.

Of the Causes of Dysentery.

THE full consideration which we have given to the subjects of malaria, of climate, and of diet and regimen, in warm climates, as causes of the most prevalent diseases,* renders it superfluous for us to enter upon them on this occasion further than to point out their very powerful influence in the production of the disease now under consideration. The extent to which dysentery prevails amongst the natives of Europe, particularly European troops, in warm climates, may be inferred from the abstracts of the official returns contained in the First Volume of the Work,† and from the returns given in our Sketches of the Diseases of India. From the former of these it will appear, that, for a series of years during which the troops were not actively engaged in the field, when the causes of this disease become greatly heightened in severity and multiplied in number, the annual rate of nominal admissions

* See the chapter in Volume I. on the Causes generally productive of Diseases of Warm Climates, particularly in India, p. 45.

† See p. 111, *et seq.*

into hospital for the Bengal European army was 35 per cent in the effective strength, and the annual rate of mortality, $5\frac{1}{2}$ per cent in the nominal admissions.* In the Madras European army the annual rate of actual admissions into hospital, calculated upon a series of years, was 27 per cent in the effective strength, and the rate of mortality in the actual admissions, 8 per cent. If, therefore, due allowance be made for the number remaining in hospitals at the time of making out the monthly returns, which necessarily swells the *nominal* far above the *actual* admissions, the proportion of sickness and deaths from dysentery, in both armies, will approximate very closely. The returns for the Bengal army do not contain the rate of sickness from dysentery in the native troops; whilst the returns of the Madras army exhibit the rate of both sickness and mortality from this disease amongst them with great precision. From these it appears, that the annual proportion of actual admissions from dysentery, in the effective strength of the native troops, was only $1\frac{7}{10}$ per cent, and the annual rate of mortality in the actual admissions was 9 per cent. The difference in the liability to this disease between Europeans and the natives of the climate is here very apparent, and will engage our attention more particularly in the sequel. This difference we shall see is chiefly the result of climate, and of the diet, regimen, and habits, of these

* The mean annual rate of sickness and mortality from dysentery, calculated from the official returns for a period of five years, in the different divisions of the Bengal European Army, was as follows:—in the Presidency division the nominal admissions in the effective strength were 48 per cent, and the deaths in the number of admissions about $4\frac{1}{2}$ per cent; in the Berhampore division the nominal admissions were 26 per cent in the effective strength, and the deaths in admissions $8\frac{1}{2}$ per cent; in the Dinapore division the nominal admissions were 79 per cent in the effective strength, and the deaths in admissions 8 per cent; in the Benares division the nominal admissions were about 18 per cent, and the deaths in the admissions $4\frac{2}{3}$ per cent; in the Cawnpore division the nominal admissions were 32 per cent, and the deaths in admissions 4 per cent; in the Meerut division the nominal admissions were 31 per cent, and the deaths in admissions $2\frac{1}{2}$ per cent; in the Malwa division the nominal admissions in the effective strength were 38 per cent, and the deaths in admissions $5\frac{1}{2}$ per cent; in the Nagpore division the admissions were 7 per cent, and the deaths in admissions 5 per cent.

It should, however, be recollected, that the returns of the Bengal European army, here alluded to, belong to a period of no active service, or of unusual prevalence of disease; whilst the returns of the Madras army, whence the deductions given in the text are made, are for a period of active service in the field, and whilst cholera was particularly prevalent.

two very dissimilar classes. The rate of sickness and mortality from dysentery, now exhibited, has been calculated as nearly as possible from the usual circumstances in which the Indo-European army is placed. When it is employed upon very active service in the field, or in marshy and wooded districts, the rate of sickness is very much increased; and the increase is not confined to the European troops, but is also remarked among the natives of the country. Thus, the proportion of dysenteric sickness was much augmented amongst the European troops in the expedition to Java,* and amongst the native troops in the expedition to Ava. The frequency of dysentery is also remarkable in those who are natives of the higher and more northerly districts of India, when serving in the lower and more marshy provinces under the Bengal† and Bombay Presidencies.

Besides being dependent upon the circumstances of locality and climate, as fully illustrated in the First Volume of the Work,‡ dysentery is further promoted by the nature of the season. Although the effect of season upon the prevalence of this disease is not so remarkable in India and warm climates generally as the influence of autumn is in some temperate countries, yet it is more uniformly observed, as may be inferred from the subjoined abstract|| from the Tables published in the Appendix to the First Volume, and which refer to the divisions of the European army under the Bengal

* See our remarks on the climate of Java, Vol. I. p. 175.

† See the remarks on the climate of Chittagong, &c. Vol. I. p. 170.

‡ See the chapter on the Causes of Diseases in Warm Climates, particularly in India, p. 45.

|| The following Table exhibits the *mean proportion* of nominal admissions into hospital of *Dysentery*, furnished by each season, calculated from a series of five years, and distinguishing the per-centage upon the effective strength in the different divisions of the Bengal Army.

	<i>Presidency.</i>	<i>Berhampore.</i>	<i>Dinapore.</i>	<i>Benares.</i>	<i>Cawnpore.</i>	<i>Meerut.</i>	<i>Malwa.</i>	<i>Nagpore.</i>
COLD SEASON, Mean Per-centage of	15	11½	21	4½	6⅔	8½	12	1½
HOT SEASON, Ditto	10⅔	6	33⅓	4½	9½	9½	7½	1⅔
RAINY SEASON, Ditto	23⅓	9½	25⅓	8⅞	15⅔	13⅔	18	3½
ANNUAL MEAN	48½	26½	79	17⅔	32	31	38	7

Presidency. In all the provinces of the Madras Presidency, dysentery is most prevalent at the commencement, during, and for some time after, the rains; shewing the powerful influence of season, and the causes contingent on season, in the production of this disease.

In respect of dysentery as well as of fevers, it may be confidently stated, that all situations productive of terrestrial emanations, or malaria, and which furnish exhalations from the decay of animal and vegetable productions, under the operation of a moist and hot state of the atmosphere, will always occasion dysentery in the predisposed subject; and that the seasons of an intertropical country, in which a moist state of the air is conjoined with the greatest daily range or sudden vicissitudes of temperature, are those that are generally most conducive to the generation of this disease.

Having thus stated what seems to us sufficient, with what has already been brought forward in the First Volume, to shew the influences of localities, seasons, and climate, in the production of dysentery, we shall now proceed to offer some remarks on those circumstances which appear very materially to predispose the frame, particularly of the European, to the operation of the endemic influences and other exciting causes of this destructive disease.

The greater prevalence of dysentery amongst the male than amongst the female sex, has been observed by the majority of writers on this

The Mean Per-centage of Deaths in the Nominal Admissions, furnished by each Season, in the Divisions of the Bengal Army.

	<i>Presidency.</i>	<i>Berhampore.</i>	<i>Dinapore.</i>	<i>Benares.</i>	<i>Cawnpore.</i>	<i>Meerut.</i>	<i>Mahra.</i>	<i>Nagpore.</i>
COLD SEASON, Mean Per-centage of	$2\frac{1}{2}$	$7\frac{2}{8}$	$7\frac{5}{8}$	$5\frac{1}{2}$	$3\frac{2}{5}$	$2\frac{3}{9}$	$8\frac{1}{5}$	$3\frac{7}{9}$
HOT SEASON, Ditto	$5\frac{6}{7}$	6	7	$4\frac{1}{3}$	$4\frac{1}{2}$	$2\frac{1}{4}$	$5\frac{1}{8}$	$2\frac{8}{9}$
RAINY SEASON, Ditto	$5\frac{1}{3}$	$8\frac{1}{2}$	$8\frac{0}{10}$	$4\frac{1}{7}$	$3\frac{5}{9}$	$2\frac{7}{10}$	$3\frac{3}{4}$	$6\frac{3}{8}$
MEAN ANNUAL PER-CENTAGE . .	$4\frac{1}{2}$	8	8	$4\frac{2}{3}$	4	$2\frac{3}{8}$	$5\frac{1}{2}$	5

From the above it will be perceived that dysentery is much more prevalent in all the divisions, excepting Dinapore, during the rainy season; whilst the rate of mortality in the number of admissions does not vary materially at any of the seasons.

disease, as it occurs in temperate climates. A similar remark may be extended to the dysentery of warm climates. This arises chiefly from the greater and more frequent exposure of males to its exciting causes, and to the partial immunity from inflammatory affections of the large bowels, resulting from regularity in the periodical discharge of the female. When dysentery attacks this sex, it usually proceeds from morbid accumulations in the bowels.

Recent comers to a warm climate, particularly soldiers and sailors, are more disposed to dysentery than long residents, notwithstanding their possession of greater tone of the digestive and assimilating functions, and a sounder state of the liver; and this disposition is, according to our experience, heightened in proportion to the youth of the individual. We consider that the period of life extending from sixteen to twenty-six, the epoch of existence at which Europeans, particularly recruits, arrive in India, is that most predisposed to intertropical dysentery; and, consequently, that it is more prevalent at this age than at any other, under the ordinary circumstances of exposure to its exciting causes. Doubtless, much may be imputed to the imprudencies which mark this period of life, and to the various exposures resulting therefrom; but they are not altogether sufficient of themselves to account for the greater prevalence of this malady, under the various circumstances in which it has come before us at this age, without imputing something to the predisposition possessed by the European constitution to be affected by dysentery, after migration to a warm climate early in life.

The form of dysentery to which new comers to a hot climate are liable, is generally less complicated, more acute, but more manageable, if treated early and decidedly, than the form of disease most frequently attacking older residents. The former class of the community is more subject to the acute, uncomplicated dysentery; whilst the latter is more liable to the complicated form of disease, more particularly to the complications of dysentery with affections of the liver and with fevers.

The prevalence of dysentery amongst recent visitors of a warm climate proceeds generally from a variety of causes. Amongst these, the greater disposition to inflammatory affections possessed by natives of a colder climate,

particularly when they have lately migrated to a warmer country; the circumstances attending their passage from one climate to another; and the numerous imprudencies which they generally commit soon after their arrival in an intertropical country, from the various temptations which come in their way, deserve particular notice.

Dysentery is more or less an inflammatory disease in almost all cases, and under all circumstances, in which it occurs in warm climates. But there is a very wide range in the nature of the states both of the constitution of the individual and condition of the bowels in which the inflammatory action supervenes. In the recent visitor of a warm climate, or in the robust and healthy, the inflammatory action is characterised by tone, is acute or phlogistic, and supervenes early in the disease, even although it may not be said to originate it. In the weak, debilitated European, or in the native of the country, the inflammatory action is devoid of tone, is more limited to the mucous surface of the bowel, more frequently supervenes to a state of irritation of the bowel from a morbid state of the secretions poured into it, either from the collatitious viscera or from its own surface, and is more prone to run into ulceration, without evincing acute symptoms, than in the robust and recent visitors of the climate. The disposition to inflammatory disease of the bowels is great amongst this latter class in proportion to the degree in which vascular plethora is present, and to the peculiarity of constitution with which it may be conjoined; and the acuteness of the attack generally depends upon the previous soundness of the frame and tonicity of the animal fibre, — circumstances possessed in the highest degree by those who are recently arrived from Europe, but which gradually disappear before a prolonged residence in an intertropical country.

The same series of changes taking place in the animal economy, from a change of residence from a cold to a warm climate, favouring the production of disorders of the biliary functions, seems also to promote the supervention of disease of the bowels. This latter effect may arise from the morbid condition of the biliary secretion, produced in the manner which we endeavoured to point out in our First Volume: for it is reasonable to

suppose, that an acrid state of the bile will both irritate the mucous surface of the bowels, and imperfectly perform its office of changing the chyme into healthy chyle. The result of this will be, that the imperfectly digested chyme will undergo those changes which its elements are chemically disposed to enter into, under the circumstances, particularly as respects temperature and fluidity, in which they are placed; that they will form combinations of an unhealthy and consequently irritating nature, and heighten the morbid effects produced by the disordered state of the bile; and thus one species of disorder will produce another, which, in its turn, will heighten and perpetuate its antecedent, until dysenteric disease is fully developed.

Another powerful predisposing influence in the production of dysentery arises out of the circumstances connected with the passage to a warm climate. During the voyage to India, both soldiers and sailors, the former especially, generally enjoy too rich and stimulating a diet for the circumstances in which they are placed. Amongst sailors, who have the active duties of the voyage to employ them, the resulting evils are not so remarkable as amongst soldiers and passengers; for the duties of the former promote the excreting functions of the body, and prevent vascular fulness and accumulations in the bowels from taking place to so great an extent as amongst the latter. Persons in the voyage to India, soldiers more particularly, are placed, during four or five months, in circumstances the most calculated to generate a liability to disease upon their arrival in that country. The quantity and quality of their food, their too liberal allowance of spirituous liquors, and the want of exercise during the whole of this period, tend most decidedly to generate a plethoric state of the vascular system, to increase the excitability of the nervous system, to augment the rigidity of the animal fibre, and thereby to give a phlogistic diathesis to the constitution generally. These circumstances thus produce a state of system the most liable to become affected by the prevalent diseases of warm climates generally, particularly fevers, dysentery, and hepatitis, soon after the European has arrived in an intertropical country, and been exposed to the most common exciting causes of these maladies. But there is another circumstance superadded to the above, during the voyage out, tending to heighten their influence, and to occasion the disease

now under consideration, more especially its acute and uncomplicated form: we allude to the costive state of the bowels, to which passengers by sea are particularly liable, and the accumulations of fæcal matters which consequently form in the cæcum and colon, irritating those viscera, or disposing them to irritation as soon as the frame is subjected to the influence of the common exciting causes of the disease. That numerous cases of dysentery originate in this way, and indeed commence very frequently with the characteristic signs of morbid accumulations in the large bowels, as pointed out in a previous section, has been a matter of daily observation to us in our practice amongst recruits and persons recently arrived in India. Nor is our opinion on this topic a solitary one: it is corroborated by the evidence of others, and must become apparent to every one who will take the trouble of directing attention to the subject. In addition to this also, the season when persons, especially recruits, arrive in India, is frequently that at which the exciting causes of disease are most numerous and energetic; and the circumstances in which they are placed soon after their arrival are very often highly injurious, and such as directly occasion the disease now under consideration.

Amongst the predisposing causes of dysentery, the most powerful undoubtedly are those states or functional disorders of the large bowels which we have already considered, particularly accumulations of fæcal matters in the colon, and morbid elongations and displacements of parts of this viscus. Indeed, these may sometimes be considered as the precursors of the disease. Disordered function of the liver, attended either with a redundant, a vitiated, or an impeded secretion of bile, also frequently disposes to an attack of dysentery on some occasions, as well as directly excites it on others. We frequently also observe it supervening, in the course of or during convalescence, from fevers of every type, especially after those in which the functions of the liver have been seriously deranged. When dysentery takes place during convalescence from fevers, or soon after recovery from them, or when it is consequent upon affections of the digestive and collatitious viscera, it generally arises from exposure to the night air, to wet and moisture, and from errors in diet and regimen: these causes being, as it were, efficient in the production

of the disease, whilst the previous malady had disposed the system to their influence. The intertropical practitioner will often have occasion to remark, particularly during his military duties, that when a patient is discharged from hospital at an early stage of convalescence from fever or hepatitis, he returns in a few days, either with a relapse of his former disease, or with dysentery; but most frequently with the latter, especially if attention have not been paid to his comfort in sleeping and to warm clothing, upon his removal from hospital into barracks, during the comparatively cold nights which prevail in some parts of India during the rainy and cold seasons, or if he has indulged in that bane of the European soldier—the intoxicating liquors of the country.

A frequent disposing cause of dysentery among the natives of India is a weakened state of the digestive and assimilating functions, more particularly when this state proceeds from a deficiency of wholesome and nutritive food. Under such circumstances, dysentery generally commences with symptoms of great debility, especially in respect of the functions of the stomach; and if, in addition to this cause, they are exposed to the influence of greater humidity and more noxious terrestrial exhalations than they have been accustomed to, particularly if these causes be conjoined with fatigue and exposure to the night-air, dysentery assumes amongst them an epidemic character, and is attended with a much greater mortality than among Europeans. In the natives of India, also, we have remarked a greater disposition to the disease in those subject to rheumatism; and whilst in them it generally proceeds from the same causes which produce rheumatism, namely, vicissitudes of temperature and of weather, and exposure to cold and wet, it has evidently alternated with this affection on some occasions, and in others supervened immediately upon the disappearance of the rheumatic affection from the extremities or large joints.

The prevalence of worms in the alimentary canal of the natives of India may have some influence in the production of dysenteric attacks; and yet, when we consider the frequent existence of those parasitical animals amongst them, and the comparatively rare occurrence of dysentery, excepting from the circumstances just now alluded to, this can scarcely be considered as

a cause of great power. The comparative immunity of the natives from dysentery seems to be entirely the result of constitution and their modes of living. The functions of the liver and bowels are, under their ordinary circumstances of life, less disposed to disorder, and seldom acted upon by those exciting causes to which Europeans expose themselves. They are also, from the nature of their organisation, less subject to inflammatory affections; whilst acute disease, particularly dysentery, more rapidly exhausts the powers of life, and thus frequently assumes an adynamic or putrid character in the natives of India. This should always be kept in mind by the practitioner, and be made the guide of his practice amongst this particular class of the community.

The predisposing causes of dysentery, when acting in conjunction, and with great energy, may even produce the disease, independently of the operation of the usual exciting causes, or, at least, without any very marked operation of these causes. But in the very great majority of instances they chiefly dispose the system to the influence of those agents which we are now about to enumerate.

Amongst the numerous *exciting* causes of dysentery to which the European soldier is liable in India, there is none whose influence is so marked as indulgence in the intoxicating liquors of the country. The sick-list of a regiment is invariably increased after pay-day, when the men have the means of this indulgence in their power; and the consequence is generally an attack of dysentery, proceeding commonly from the excitement of the mucous surface of the digestive organs, and the derangement of the biliary and other secreting functions, occasioned by these beverages. When the soldier becomes excited by the use of spirituous liquors, he is utterly indifferent to all the consequences of exposure to the direct rays of the sun, to the cold dews and condensed exhalations of the night: and, negligent of the necessary protection from currents of air, and fogs, and rain, he often exposes himself to each of those causes of disease, sleeping sometimes in the open air and upon the damp ground, without any substance intervening sufficient to protect him from the chilling influence of the cold, damp earth on the

one side, and the comparatively cold, moist, and unwholesome atmosphere on the other. Thus, the powers of life experience collapse from the exhausting effects of excessive stimulus, and the influence of depressing agents brought into immediate operation on the frame; whilst the fall of temperature and the moist air combine with the exhausted powers of the system to produce determination of the fluids from the external surface of the body to internal organs, more particularly to the bowels and liver,—the viscera which have been excited and otherwise disordered by the liquors that have been the means of occasioning such baneful exposures.

Next in importance to the use of intoxicating liquors, is exposure to vicissitudes of temperature. At the commencement of the monsoon, and during, as well as for some time after, the rains, the vicissitudes of weather are very great; and in many situations, particularly in the more interior and highly elevated parts of India, the thermometer sometimes ranges nearly forty degrees within the twenty-four hours, and frequently from twenty to thirty degrees. During the heat of the day the circulating fluids are determined copiously to the surface of the body; and this external flow of the circulation is generally promoted by the duties, more or less, which are performed by all. During night, the terrestrial exhalations, which have been carried into the higher regions of the atmosphere, are precipitated in the form of dews and fogs; and these, combined with the great fall of temperature, chill the exhausted frame, and throw the great mass of the circulating fluids upon those internal organs which are disposed, either from the constitution, habits, or negligences of the individual, to disease.

The hurtful influence of vicissitudes of temperature is also frequently heightened by the want of suitable clothing, and proper places for sleeping. Reposing upon the ground without the requisite bedding is not unusual, and to this circumstance many cases of dysentery amongst troops, particularly when on service or in encampments, are always to be traced. Inattention, also, to the changing of wet clothes, or the inability of doing so, either from the services in which soldiers may be engaged, or from the want of requisite apparel, is amongst the most frequent causes of the disease.

These exciting agents often produce other diseases as well as dysentery; but this latter malady is most frequently the result of those causes amongst troops on actual service in a warm and unhealthy country, particularly during the rainy season, and in the vicinity of large rivers, canals, and places abounding with emanations from the decay of animal and vegetable matters. When troops are stationed in the neighbourhood of those localities, dysentery generally becomes extremely prevalent, and often assumes characters of a more or less malignant nature,—a circumstance that seems to be promoted by the presence of animal matter in the exhalations which, with other causes, combine to generate the disease. This was remarked particularly in the expedition to Java. The cases of dysentery which occurred and were treated in the vicinity of Batavia, where the country is low, moist, and abounding with putrid animal as well as vegetable matters, exposed to a hot and close atmosphere, generally assumed a malignant character, and speedily terminated in ulceration and sphacelation of the large bowels.

It not infrequently happens, that both the water and the food with which troops are supplied, particularly on foreign service in warm climates, are such as promote the operation of the endemic causes, or at least promote their influence in the production of the disease now under consideration, in preference to fever;—many of the causes already particularised being such as, in some constitutions, would have produced fever, if the quality of the water and of the food had not determined their operation upon the bowels, assisted, no doubt, in many cases, by the predisposing causes already mentioned, and particularly by accumulations of morbid matters in the cæcum and colon.

We have frequently remarked the very powerful influence of brackish water, and water which has been kept for a considerable time shut up from the air, and in a stagnant condition, and particularly water taken from marshes, in the production of dysentery. We believe that the frequency of this disease amongst the crews of ships during the sixteenth and seventeenth centuries, especially in warm climates, was chiefly owing to the unwholesome nature of the water, acquired by being long kept excluded from the air in

wooden casks. Water, under such circumstances, especially river-water, soon acquires a putrid and very offensive smell, becomes thick and muddy, and abounds with animalculæ.

Food of a bad quality is often equally injurious to the frame, and generally operates its baneful effects by either disposing the system to attacks of dysentery, or by directly exciting this disease. We believe that the flesh of unhealthy animals is particularly apt to produce very severe dysenteric affections; and we know that sickly animals, especially sheep and bullocks, have been killed on some occasions for the supply of the troops in India, notwithstanding the strictest endeavours on the part of the authorities and officers to procure the most wholesome animal food for the men. We have often had the most convincing proof that the use of fresh pork has been productive of dysentery, not in solitary cases, but upon a very extended scale. When the Madras European regiment was stationed at Wallagahbad, dysentery became alarmingly prevalent in it; and after the strictest investigation into the cause, we at last found that the practice of eating pork to breakfast was general amongst the men, although prohibited by the standing orders of the regiment. These orders were strictly enforced on bringing the facts to the notice of the authorities, and the disease ceased. Swine, particularly in the East, are the dirtiest feeding animals, living generally upon putrid animal matter and every species of nastiness, particularly the excrements of other animals. This circumstance, together with the known effect of pork upon the system, and its influence in the production of disease, was doubtless the cause of its proscription from amongst other articles of animal food by the Jews and many of the nations of the East.

Amongst recent visitors of a warm climate, the use of unripe or of too much fruit is frequently an exciting cause of dysentery. Fruit acts both by irritating the mucous surface of the alimentary canal, and by disposing the other matters received into the stomach to enter into unwholesome and irritating combinations, which, if the large bowels be already disposed to disorder, either from the accumulation of fæcal matters or morbid secretions, excite this disposition into action.

Dysentery is generally much less prevalent during dry and hot weather; but it is generally, when observed under such circumstances, much more frequently associated with disease of the liver than when it proceeds from cold and moisture. Thus, dysentery is not so frequent in the southern provinces of the Indian peninsula and on the Coromandel coast as it is in many of the more northerly provinces and on the Malabar coast; but in the former it is more generally complicated with affections of the liver, whilst in the latter it supervenes more frequently as the sequela of fevers, and is not infrequently associated with disease of both the liver and spleen, but less often than in the southern provinces.

The influence of the moon in the production of dysentery, as well as of fevers, has been much discussed; and whilst it has been contended for by many very experienced writers on the diseases of India, it has been denied by others, particularly by those who have had little or no means of judging of the question. That dysentery and fever are both observed to supervene in a manner well calculated to authorise a belief in sol-lunar influence, cannot be denied by any experienced practitioner, or close observer of the diseases of India. But we do not suppose that even the most zealous supporters of this opinion mean to contend that this prevalence of disease at particular periods, corresponding to new or full moon, results from any direct influence of this planet, but from the vicissitudes which generally take place in the physical elements by which the human species is surrounded and influenced.

On the subject also of the infectious nature of dysentery, much has been advanced. As the disease is met with in warm climates, it seldom or never proves contagious. We know of no instance in which it has proved itself such in India. This, doubtless, is owing to the circumstances under which it is usually met with in warm countries, to the causes whence it most frequently springs, and to the free ventilation and attention to cleanliness which are always observed when numerous cases of this disease are admitted into hospitals. Although it appears both endemically and epidemically, under circumstances favourable to its prevalence, yet no unequivocal case of com-

munication of the disease from one person to another, who has not been subjected to the causes whence it usually proceeds, has been satisfactorily made out in India, during our practice in that country. We do not deny, however, that, under circumstances of crowding together of the sick, want of ventilation, and inattention to cleanliness and the removal of the evacuations, or when it is complicated with typhoid and malignant fevers, as it occasionally is in temperate countries, it will not evince this property: indeed, that it should evince it, is conformable to the laws which seem to influence the human economy; and is only an example of the activity of one of the causes which we are convinced is amongst the most influential in producing the disease, namely, putrid animal emanations floating in a warm, stagnant, and moist atmosphere.

The influence of other diseases in producing dysentery should not be altogether overlooked, especially as some of them often terminate in the pathological state which is efficient of the dysenteric disorder. Thus, during the progress of the various types of fever, of diseases of the spleen and pancreas, of rheumatism and catarrh, dysenteric disease not infrequently supervenes. As the sequela of fever, dysentery is of very frequent occurrence, and here the connexion of morbid action may be readily traced. As far as observation of the phenomena and progress of the fevers of warm climates, and *post-mortem* examinations of fatal cases, enable us to offer an opinion, we conceive that the mucous surface of the alimentary canal, particularly of the stomach and small intestines, is affected in a very marked manner in these diseases; and that if this affection of the digestive mucous surface be not inflammatory at its commencement, it soon assumes this state in its progress, and occasions those appearances, as displayed by necroscopic research, which are uniformly viewed as being either essentially inflammatory, or the usual consequences of inflammation. Such a condition of the superior parts of the alimentary canal existing in fever, it only requires an extension of the inflammatory action of the mucous surface to that part of it lining the large bowels, to generate dysentery; and thus the complication of dysenteric symptoms with fever, or their supervention as the sequelæ of fever, is readily explained.

Amongst the natives of India, and old European residents in the climate, dysentery frequently supervenes to the healing of chronic ulcers, particularly of the lower extremities, and to the disappearance of eruptions from the external surface. What, however, may seem to be the cause, may be rather viewed as the effect in many cases of this description; the healing of the external sores proceeding from the increased irritation and determination of the circulating fluids to the internal diseased organ. But we have great reason to believe, that the reciprocating influence of states of the external surface upon that of the bowels, is particularly remarkable in all the dark-skinned tribes; and that this influence is, in some degree, attended to and promoted by the habits and customs of the natives of India. The attention which is paid by them to the preservation of a free state of the cutaneous exhalations, and the means which they habitually adopt of moderating its excess and of preventing its suppression, is perhaps one of the chief causes of the infrequency of dysentery amongst them. The means to which we allude are, bathing, frequent ablutions of the body, followed by frictions with oleaginous substances, and warm clothing about the lower part of the abdomen and loins.

Dysentery, it will be perceived from what we have advanced respecting its causes, is very frequently met with as a sporadic disease, proceeding chiefly from morbid accumulations in the large bowels, and from the irritation which morbid secretions and other matters occasion in these viscera,—from the use of the noxious intoxicating liquors of the country,—from vicissitudes of season, weather, and temperature,—from deficient or inappropriate clothing,—from a want of beds and cots, and sleeping on the ground and in tents,—from exposure to the night dews, to moisture, cold, or to wet, particularly after great heat, exertion, fatigue, and copious perspirations,—from the use of bad water and unwholesome food,—and from frequent exposure to heavy rains, accompanied with fatigue, insufficient nourishment, and want of warm clothing.

When observed as an endemic disease, dysentery generally proceeds from marshy localities, and from the various circumstances already noticed as

being productive of malaria, or putrid animal and vegetable exhalations, — from the use of unwholesome water, — from partial inundations by the sea, — and from peculiarities of climate, particularly a climate generally characterised by great heat and moisture during the day, with comparatively cold nights and evening fogs and dews.

The epidemic occurrence of dysentery seems to be connected in some respect with the general character of the seasons during which it is prevalent. A season which furnishes the exciting causes above particularised in a remarkable manner, especially during circumstances which are favourable to their operation, as fatigue, unusual exposure, deficient or improper food, want of the requisite protection from vicissitudes of weather and of temperature, may be considered as that which will favour the prevalence of dysentery in an epidemic form. But, independently of those more evident causes, there seems generally to be present some very efficient influence in the constitution of the atmosphere itself, which cannot be satisfactorily recognised in respect of its nature, although sufficiently manifest in its effects: this influence is very probably dependent upon the condition of the electricity existing in the atmosphere; but what the particular electrical states are, which appear to favour the prevalence of dysentery in an epidemic form, when assisted by the usual predisposing and exciting causes of the disease, have not been ascertained, nor have they come sufficiently within the range of observation; indeed, no satisfactory attempts have yet been made to render them matters of experiment and research. That a change in the electrical states of the atmosphere is, in some degree, related to the unusual prevalence of certain maladies, and, on some occasions, to those conditions of the seasons which favour the production of disease, whilst, on others, the relation to peculiarities of season, if it at all exists, is by no means evident to our unassisted senses, is nearly all that we as yet know of the subject; for, in what the relation between electrical states of the atmosphere and disease, or between these states and peculiarities of seasons, actually consists, we are entirely ignorant, although that there is some relation seems evident.

Having thus discussed the various causes of intertropical dysentery as

fully as appears to us necessary, we shall conclude this section with a few brief remarks respecting its proximate cause, or the pathological state of the large bowels, upon which all the phenomena constituting dysentery depend. This disease has been viewed as not being essentially inflammatory; and when the inflammatory state has supervened unequivocally, it has been considered rather as a fortuitous occurrence and as a contingent consequence of the disease, rather than the disease itself. This is, doubtless, the fact in many cases of dysentery occurring in a mild form in temperate climates, during the early stages of the disease. But we conceive that but few cases can occur in which mucus with blood is voided *per anum*, with tenesmus, fever, and the other symptoms of fully formed dysentery, and yet every portion of the large bowels be free from inflammatory action. In numerous instances there can be no doubt that the disease consists at its commencement of an irritated state merely of the mucous surface, with increased action of the muscular coats of the large bowels, and augmented secretion and exhalation from the mucous follicles and capillary vessels; and that this condition is either the result of morbid matters lodged in the cæcum and cells of the colon, or of an increased afflux of the circulating fluids to this part of the digestive canal, or of both these conditions conjoined. In the majority of cases, however, this pathological state rapidly runs into inflammatory action, more or less acute and energetic in its character, according to the constitution and habit of the individual affected, and the nature of the causes and concomitant circumstances of the disease.

Sporadic cases occurring amongst recent comers to a warm climate generally present signs of active inflammation, with a tendency to extend itself to the more external coats of the bowel; whilst cases supervening amongst debilitated persons and those who have resided long in a warm climate, or in the natives of the country, offer more of the signs of an erysipelatous state of inflammatory action, or a combination of inflammation of the internal surface of the large bowels with deficient power of the system, and with extension of disease to the mucous surface of the small intestines. This latter state is particularly prevalent in cases proceeding from endemic or

epidemic causes and influences, as from localities abounding with exhalations from animal and vegetable matters in a state of decay, and from moist, warm, and close conditions of the air; whilst the phlogistic form of disorder is more the result of vicissitudes of temperature, exposure to currents of air, and errors in diet and regimen, amongst the young, plethoric, and previously healthy.

When dysentery supervenes with the erysipelatous characters, it may run its course as rapidly as the more phlogistic form; but it is attended with less painful symptoms, with fever of a lower type, and with greater sinking of the powers of life, and, consequently, with a greater tendency to ulceration and sphacelation: although more silent, and apparently less violent, it is quite as active as respects its progress, much more insidious, less under the control of medicine, and, consequently, much more dangerous, than when attended with symptomatic inflammatory fever.

From what we have now advanced, it will be perceived that we consider dysentery as being essentially an inflammatory disease,—the inflammatory action of the mucous coat of the large bowels in some cases being coeval with the dysenteric symptoms, in others supervening rapidly to them,—characterised frequently by the acute or phlogistic state; and as often by a rapid exhaustion or deficiency of power, and with low adynamic fever; and in every case accompanied with an irritative action of the muscular coats of the large bowels, with an increased afflux to, and discharge of fluids from, their internal surface, and retention of faecal matters in the cæcum and cells of the colon, until they are dissolved or broken down by the serous fluids poured out and passing around them.

Such is the view of the nature of simple dysentery which we entertain, and of the condition of the large bowels productive of dysenteric symptoms, when either proceeding from, or associated with, disease of the liver and with fevers. When, however, the dysenteric affection supervenes either to hepatic disease or to fevers, or is associated with them, the mucous surface of the

small intestines, more particularly of the lower portion of the ilium, generally presents also marks of inflammatory action as well as that of the large bowels, but to a much less extent than they.

The hepatic form of dysentery is commonly observed amongst those who have resided for some time in a warm climate, who have suffered from hepatic disorder, intermittent and remittent fevers, and affections of the stomach, and who have been addicted to spirituous and intoxicating liquors. Hence it is chiefly observed amongst the European soldiery in India; and, although not the most prevalent disease, is the most destructive to which they are liable. On the other hand, the simple dysentery is met with most frequently in recent comers to a warm climate, and in the natives of the country, amongst whom hepatic disease, particularly of an acute or structural kind, is rarely observed. In Europeans recently arrived in India, the dysenteric attack is generally acute, owing chiefly to the age and plethoric habits of those it affects, and, as we have already stated, consists of inflammation of the large bowels, commencing in the mucous surface, generally from morbid accumulations in these viscera; and although it is often attended with the discharge of accumulations of bile, or with an increased and morbid secretion of this fluid, it is seldom accompanied, unless in its latter stages, with structural disease of the liver. Such disease, however, sometimes supervenes, in consequence of the intimate vascular and nervous connexion existing between the liver and bowels, as already remarked.

Amongst the natives of India, the simple dysentery is the form generally observed, the liver being but little disposed to inflammatory action in them. Dysentery, when it occurs in this class, presents but few of the acute or phlogistic characters, except amongst the more robust and better fed, and the natives of the higher provinces and more northerly latitudes, and then only at the commencement of the disease; and even amongst them the inflammatory symptoms are chiefly of the erythematic kind, being confined to the mucous surface, and terminating in ulceration or sphacelation, without any acute or painful symptoms. In them also the disease soon exhausts

the energies of life, and assumes the adynamic form, requiring a restorative, tonic, and an astringent mode of cure.

We may further state, in conclusion, that dysentery is endemic to numerous parts of India, both as respects European and native constitutions, and that it occasionally appears in an epidemic form, seemingly from certain states of the atmosphere, connected sometimes with vicissitudes of weather, and seasons favourable to its prevalence, and with the operation of the common exciting causes of the disease, as already specified.

Whether occurring as a sporadic, endemic, or epidemic disease,—whether affecting the European or native constitution,—or whether assuming the simple or complicated form,—dysentery seldom supervenes as the effect of the operation of a single cause: generally two or more of the exciting causes act with more or less activity, and are assisted by those which predispose the frame to their influence, in the generation of the disease. Very frequently, in addition to the predisposition arising from plethora, fatigue, or loaded state of the large bowels, and a deranged condition of the alvine secretions, several of the common exciting causes of the disease, such as intoxication, exposure to the night air, wearing wet or damp clothes, insufficient clothing, sleeping on the ground, and unwholesome food, act in conjunction; and thus the predisposing and exciting causes may be variously combined, according to the very numerous circumstances in which individuals may be placed in a warm climate, and to the various contingences of locality, weather, season, and temperature, to which they may be exposed.*

* In support of the remarks we have offered respecting some of the causes of dysentery, we subjoin an extract from a report made by Dr. Strachan, inspector of hospitals at Bombay, to Sir James M'Gregor, respecting the causes of the prevalence of disease, particularly dysentery, amongst the troops which have recently arrived at that Presidency. It is perfectly in accordance with our own experience, as stated in the foregoing section:—

“ Referring to the paragraph of the board letter of the 21st December, 1825, wherein, adverting to the great mortality which occasionally takes place in European corps soon after landing in India, an

SECTION IV.

Of the Appearances observed upon the Examination, after Death, of Cases of Dysentery.

THE appearances remarked upon the examination of fatal cases of dysentery deserve the greatest attention, inasmuch as they point out the nature of the disease, and the practice most likely to be serviceable in its early stages, before the structure of the large bowels is deranged to an extent incompatible with the duration of life. In those cases which terminate fatally, in the most rapid manner, sphacelation of the inner coat of the bowel has generally supervened, leaving, however, portions of the internal surface either entire in structure, although actively inflamed, or studded with ulcerations in various stages of their progress. From the condition of the least-changed portions of the bowel, we may infer the probable state of the parts most disorganised before structural change took place, especially as such change is a frequent

anxiety is intimated to be made acquainted with the causes which lead thereto, — I beg to state that, having submitted the subject to the medical officers in charge of corps, I have the honour to transmit copies of their respective replies. In doing so, I would beg, myself, to observe, that the mortality in question would appear not a little to depend on the several causes following, [here Dr. Strachan has embraced the different causes most insisted upon in each of the communications transmitted to him], namely, — 1st, to a plethoric state, the consequence of a long voyage, full living, &c.; 2d, to the state of their bowels, most probably rather constipated, and with all the alvine excretions more or less deranged; 3d, to their being exposed, under these circumstances, to a vertical sun and a free use of ardent spirits, these causes being also aggravated by inexperience and carelessness; 4th, to the usual period of the arrival of the troops, viz. a short time before the setting in of the monsoon, which with the month immediately succeeding, is regarded as the most unhealthy time of the year; 5th, to these may be added the change of diet and of clothing; and, although last not the least, want of bedding, a cause sufficient in itself to occasion sickness and mortality. The above observations are meant to apply to the arrival of a *regiment* in India; but detachments are much more exposed to the causes of disease. Should the corps to which they belong not be at the Presidency, they remain for a greater length of time in an unsettled state, and are perhaps worse looked after; besides they may have to undertake a distant march, always unfavourable after a long voyage.”

consequence of the inflammatory action actually observed in the parts of the mucous surface which have not been destroyed by it, either in consequence of the inflammation supervening at a remoter period of the disease, or being of a less acute character.

Hence, as may be expected, we find, upon the examination of fatal cases soon after death, the effects of the disease rather than the disease itself. But as these effects are the legitimate consequences of inflammation, and as inflammation, in all its stages and with all its usual effects, is uniformly observed, the inevitable and only inference which can be deduced from them is, that the disease consists of inflammation of the mucous surface of the large bowels, and that our method of cure should be devised with a view of removing this state as well as the causes which tend to perpetuate it.

It is extremely probable that the inflammatory action has been occasioned by some irritating cause lodged in the *prima via*, inducing simple irritation, in the first instance, of the capillary vessels and exhalants of the mucous coat of the large bowels, or by other causes acting upon the body from without, and producing a determination of the circulating fluids to the same situation, and a similar condition of the vessels; but in whatever way it may originate, there can be no doubt that inflammatory action is, in the acute form of the disease especially, almost coeval with the dysenteric character of the stools; and the treatment which is founded upon this view will generally be the most successful in combating this disease as it is observed in warm climates. But whether dysentery originates in simple irritation, attended with increased exhalation, and terminating in acute inflammation of the mucous surface of the large bowels, or consists of inflammation of this surface from the commencement of the disease, is a question which cannot be solved by *post-mortem* examinations. Both these pathological states may be present in different cases, and may depend upon the causes producing the disease, and the constitution of the individual affected: from their nature they may be expected to produce analogous symptoms, and such as we observe generally to characterise the commencement of dysenteric affections.

Upon opening the abdomen of fatal dysenteric cases, the first object which generally attracts attention is the state of the omentum. This part is frequently inflamed, owing evidently to the extension of the inflammatory action to the peritoneal surface of the large bowels, and thence to this part. Sometimes it adheres, through the medium of coagulable lymph, to the more superficial convolutions of the bowels, at other times to the anterior part of the brim of the pelvis, or even to both: more frequently it is drawn up irregularly to the arch of the colon, and occasionally it seems wrapt close up to this part of the large bowel. Sometimes it is drawn to one side, and adheres both to the colon and to the abdominal parietes. These appearances are the more marked, if the ulcerations in the large bowels, which we shall have immediately to describe, have perforated the bowel, so as to occasion the extravasation of its contents into the peritoneal cavity, thereby producing general peritonitis; and when the dysentery has been complicated with hepatic disease.

With respect to the external appearances of the large bowels, it will be necessary to premise a few remarks before we proceed to describe the state of their internal surface. Sometimes these viscera present no external marks of disease to a superficial observation, and yet they will be found extensively disorganised when laid open. We suppose that it has been owing to their apparently healthy condition externally, that we so frequently have been furnished with accounts of a natural state of the large bowels having been observed in dissections of fatal cases of dysentery. The inference, to our minds, upon reading such accounts, is, that the individuals who furnished them have not inspected the seat of the disease which they had been attempting to investigate. Even when the colon is not remarkably diseased in its external surface, it generally presents one or more of the following states:—It is usually more or less distended with flatus. The colour of its surface is various in different cases, and the shade different in different parts of the same bowel. Upon grasping the viscus, and running the fingers along it, a different feeling is communicated to the touch in distinct parts of it: at one place it is thickened and doughy, in another, thin and membranous. In one part the general shade of colour externally is a bluish-gray; in another, a greenish-blue: in one case it is verging to purple; in another,

it is pink: sometimes it is obviously inflamed in its serous covering, the capillaries, distended with blood, running in all directions, and forming a close reticulum in its surface; occasionally the colour of the surface is quite natural, and the peritoneal covering possessed of its natural diaphanous appearance.

The shades of colour presented by the cæcum and colon externally, although frequently depending upon, or having some relation to, the states of the internal coats of these viscera, yet sometimes have no such dependence: thus we have observed, in cases where the peritoneal surface was the most pale, the internal or mucous surface of the bowel was most deeply diseased, of the darkest colour, and either sphacelated or extensively ulcerated. In other cases, where this viscus was externally of the deepest colour, varying in some parts from a brick-red to a reddish-brown or deep purple, the internal surface has sometimes presented less than usual marks of disease in those situations. Hence, although the colour of the bowel externally may frequently depend upon the state of disorganisation existing internally, yet no such connexion should be necessarily expected.

Displacements, elongations, and unnatural convolutions of the colon, are not infrequently observed in dissection of dysenteric cases. These have been already noticed; but we may further observe, that they are generally connected with some degree of relaxation of the longitudinal bundles of fibres which draw the colon into a sacculated form when in a state of contraction, so that the bowel in those states seldom presents many of those deep circular folds which form its cells; or they exist only in a small degree. In the majority of cases wherein displacements or elongations of the colon have been remarked by us, its peritoneal surface has been inflamed in parts, particularly that portion which was displaced. This is shewn in several of the Plates, where coagulable lymph may be seen covering the displaced portions, and connecting their surfaces either to each other or to adjoining parts, and sometimes to both. Amongst the most frequent displacements of the colon remarked, are,—first, a loop of the sigmoid flexure descending low into the pelvis, close to, sometimes adhering to, the urinary bladder and rectum, and explaining the disorder of the urinary function remarked through

the progress of the disease; second, the descent of the transverse arch of the colon, generally towards the right side, nearly as low as the pubes, as represented in Plates XXIII., XXIV., XXV., XXX., &c.

Sometimes the cæcum and colon are distended with a foetid flatus throughout, and the caliber of the bowel every where increased. In many cases the distensions are partial, some parts of the viscus being much constricted. The constricted portions are occasionally very small, appearing as if a ligature were obstructing the canal of the intestine, as may be seen in Plates XXVIII. and XXXVII. fig. 3. In other cases the constriction involves a considerable portion of the colon, as in Plates XXX., XXXI., XXXVI., and XXXVII. fig. 2. Nor is this lesion confined to one part of the colon,—this viscus frequently presenting several parts in a more or less constricted state, with the intervening portions much distended, either with flatus alone, or occasionally with flatus, feculent matters, and morbid secretions, as in Plates XXVI., XXX., XXXI., and XXXVI. The distended parts of the colon are chiefly those near the cæcum and transverse arch, whilst constrictions of the bowel are most frequently remarked about the sigmoid flexure and near the rectum: the transverse arch is also frequently contracted to a very great degree, and this particular state is sometimes altogether confined to this part of the bowel, and occasionally the sigmoid flexure and the rectum are similarly affected. Indeed, every part of the large bowels, from the cæcum to the verge of the anus, is occasionally found the seat of contractions as well as of distensions, in the examination of fatal cases of dysentery; and the constrictions are present in every degree, vary in number from one to five or six, and occasionally they are much more numerous, as shewn in the above Plates.

The constrictions in some cases seem to be chiefly the result of a spasmodic action of the circular fibres of the part affected, owing to the irritation and inflammation of the internal surface. In other cases they seem to be of a more permanent nature; although most probably at their commencement they were the consequence of spasm. When the parts contracted are also found externally inflamed, thickened, and hardened, and in a semi-cartilaginous state, as they frequently are in the more chronic cases, their nature cannot be mistaken; and they must be viewed as one of the results of a slower

state of inflammatory action, or of acute inflammation terminating in the chronic form: they are also very often the effect of repeated attacks of the disease. Sometimes the constricted portions of the bowel are remarkably inflamed externally, and occasionally they present in the peritoneal surface no very evident appearance of inflammatory action; although, internally, both inflammation and its consequences are present to a great extent. The narrow constrictions, as if from a ligature, are those which least frequently offer an inflamed appearance externally.

When the constrictions tend nearly to efface the canal of the bowel, the part above is usually much distended, and in some cases the coats of the distended portion are lacerated, and the contents of the bowel effused into the peritoneal cavity. The laceration seldom takes place in a sound part of the bowel; it generally occurs, or at least commences, in a part which has been ulcerated internally, and softened by the existing inflammation. The laceration of the distended part of the bowel is mostly soon followed by the death of the patient, but seldom before evidences of general inflammation of the peritoneal surfaces have been produced by the effused matters, and the bowels are glued together by coagulable lymph; and albuminous exudations, with a turbid serum, are poured out into the abdominal cavity. Sometimes the lacerated portion of the bowel is situated below a constricted part. When this is the case, there is always found a still more constricted portion below the laceration, which is situated in a more or less distended part of the bowel; although, after the laceration has taken place, the extent of the previous distension cannot be ascertained. In addition to the contractions and constrictions of the colon, the parts thus diseased may be still farther deranged: they may be very closely adhering to adjoining viscera, or pressed upon by parts morbidly distended; or they may form very sharp turns and convolutions, tending still further to obstruct their canals;* or they may be encumbered by large effusions of coagulable lymph upon their external surface, forming bands or artificial ligatures in the processes of condensation and adventitious organisation, which these effusions often experience when life is prolonged for any considerable time after they first take

* See Plate XXX. fig. 1.

place.* Similar appearances are also observed in respect of the distended parts of the bowels, as shewn by several of the Plates accompanying this Volume.†

When the inflammation of the internal coats of the bowel has proceeded externally so as to implicate the peritoneal covering, *post-mortem* examinations, if performed sufficiently early after death, generally disclose the external surface of the large bowels in a state of high vascularity; sometimes of a deep pink hue, at other times of a reddish-brown, and occasionally with signs of congestion as well as of arterial action, the peritoneal coat of the bowel then having a purple appearance. In addition to these, the adjoining surfaces are glued together by a thin coating of coagulable lymph; or considerable masses of this substance are effused and partially organised, generally between the duplicatures of the bowel, and in the angles formed in its course in the abdomen.‡ The intervening parts of the external surface are often not much changed in colour: the tint is sometimes more deep, and at other times more or less unnatural, marking considerable disorganisation of the internal tunics of the bowel; and occasionally there are distinct clots of coagulable lymph upon the surface, sometimes pointing out the situation of an internal ulceration, which had nearly made its way to the peritoneal covering of the bowel.¶ In some instances the ulcerations, when they have proceeded thus far, rise like the variolous pustule on the surface of the intestine, as in Plate XXXVI.

In addition to adhesions found between the cæcum and colon, between different parts of the latter viscus, or between it and the rectum, the colon is very frequently connected by means of coagulable lymph, of a more or less firm consistence, to the inferior surface of the liver, or to the spleen, small intestines, or to the opposite parts of the abdominal parietes; and these adhesions are sometimes complicated with distensions of the bowel, or with constrictions such as we have described, or with both in the same case. For illustrations of these states of disease we refer our readers to the Plates

* See Plate XXII. fig. 1.

† See Plates XXIII. and XXVI.

‡ See Plates XXII., XXIII., XXVI., &c.

¶ See Plates XXIV., XXX., &c.

accompanying this Volume. The *appendix vermiformis* is generally involved in the morbid changes affecting the cæcum; and the *appendiculæ epiploicæ* are diminished in size, and have a gelatinous appearance. The colon, in the majority of cases, has lost its divisions into numerous cells; and it presents a more or less uniform surface, with thickening, and a lacerable state of its coats.

Having described the *external* appearances presented by the large bowels, in examinations of dysenteric diseases after death, we now proceed to notice the more remarkable changes which are observed in the *internal* surface of these viscera; and we shall afterwards conclude with an account of those lesions of *adjoining viscera* which are usually detected in the more complicated forms of dysentery.

After a careful inspection of the external appearances of the abdominal viscera in *post-mortem* examinations, and after remarking the relative positions, colour, consistence, and such other sensible qualities as they may present, the conditions of these viscera internally should next be inquired after and carefully ascertained, before any report respecting them should be hazarded. In order to carry this intention the better into effect, the small intestines should all be removed from the abdomen, both for the purpose of a more careful inspection, and of being laid open throughout their whole extent, in order to ascertain the states of their internal surface, and with the view of leaving more room in the abdomen for a careful examination of the cæcum, colon, and rectum, which should also be opened throughout. When this is done, these bowels always present appearances of disease; indeed we do not conceive that a fatal case of dysentery can occur without leaving marks of disorganisation, to some extent or other, in one of these viscera.

It will scarcely fall to the lot of the most assiduous inquirer into the pathology of dysentery to observe inflammation of the mucous surface of the large bowels in its early stage, without being accompanied with some one of its usual consequences, or, at least, with its advanced stages, in some part or other of these organs. Indeed, this disease can scarcely be said ever to terminate fatally unless from the consequences of inflammation; therefore the appearances presented by the first stages of inflammatory action cannot be

expected to be found upon dissection, unless when supervening secondarily. The earliest morbid change which is disclosed by examination after death is a very bright-red colour of the mucous surface, from a minute injection of its capillaries. This is only observed in parts of the bowel: the inflammatory action, which is here at its acmé, having, in some portions of the viscus, occasioned abrasions of the mucous coat; in others, terminated in ulceration; and in some parts in sphacelation.

The most uniformly red colour of the mucous surface of the cæcum, colon, and rectum, which we have observed in dysenteric cases, has seldom or ever been devoid of ulceration in some one of its stages. Plate XXXII. shews the internal surface of these bowels nearly uniformly inflamed, particularly the more prominent villi, with incipient ulcerations of a lighter shade of colour thickly studded through its whole extent.

Those portions of the internal surface which are deeply inflamed are often deprived of the mucous membrane to a considerable extent: sometimes the mucous coat is detached merely in a small space, seldom exceeding the size of a sixpence; the edges of the still adhering portion being somewhat elevated and irregular, but always deeply inflamed, unless the parts have lost their vitality altogether, and become sphacelated, which is frequently the case. Sometimes a great number of these small abrasions of the mucous coat is formed: at other times only one or two. This detachment of portions of the mucous membrane seems to arise from the extension of inflammation to the subjacent cellular tissue, connecting it with the muscular coats of the bowel, and from an effusion of fluid underneath, thus depriving the mucous tunic of its connexion with the parts from which it derives its vitality; and hence it sphacelates, and is thrown off with the fluids effused beneath it. Having been thus removed, the subjacent texture and adjoining parts which have not experienced these changes present the red, inflamed, and excoriated appearances portrayed in Plate XXXVIII.

When sphacelation supervenes to the acute inflammatory state, and attacks one or more of the tunics of the bowel, in addition to the mucous coat, then

the part so affected loses, in a great measure, its florid appearance, and assumes a greenish, greenish-brown, deep-green, or dirty purple hue; or it presents a dark-gray or brownish-gray appearance. The transition from a florid red to these very different shades of colour is often very sudden; and the tints are variously disposed, so as to have a dotted, streaked, or shaded appearance, as shewn in several of the accompanying engravings.*

When patches of the mucous surface have been detached and entirely removed from their situations, the parts of this surface intervening and still remaining in their places may readily be removed from the subjacent tissue: sometimes they are already partially separated, admitting a probe to be passed beneath them; and occasionally their edges float loosely in the bowel. This condition of the parts is partially shewn in some of the Plates, which will further illustrate the condition of the inner surface of the large bowels in fatal cases of dysentery.

Ulceration is one of the most frequent consequences of the disease, and is often observed in addition to the appearances which we have now described, or independently of them; but although these appearances are very often, and, indeed, generally conjoined with ulceration, in some part or other of the large bowels, or in some of its stages, yet, occasionally, an inflamed, excoriated, and sphacelated state of the internal tunics of these viscera is observed, uncomplicated with any ulcerative process, as shewn in Plate XXXV. The ulcerations which are so frequently observed in the large bowels in dysenteric cases vary very much in their character. Sometimes they are small and thickly clustered together; occasionally they are large, distinct, and placed at considerable distances from each other; and very frequently they are small and nearly confluent in one part, and large and distinct in another part of the same bowel, as shewn in Plates XXXIV., XXXVI. fig. 2., and XXXVIII. In some cases the ulcerated bowel presents but few marks of inflammatory action, as in Plate XXXIV. fig. 1, excepting at the margins of the ulcers. Occasionally the coats of the bowel immediately surrounding the ulcer are

* See Plates XXXIII., XXXIV., XXXV., &c.

thinner and softer than in the intervening sound parts; but most frequently the ulcerations present thickened and elevated edges, as represented in Plates XXVIII. fig. 3, XXXVI. fig. 2, and XXXIX.

In those cases wherein the ulcerations are placed as it were in the centre of an elevated and thickened base, as shewn in Plates XXVIII. fig. 3, XXXIV. fig. 2, XXXVI. fig. 2, and XXXIX., the disease appears to have commenced in the mucous follicles, and to have advanced, in a chronic form, until the changes displayed in these engravings were developed. Sometimes the ulcerations, which are thus surrounded by a thickened and elevated base, present appearances of exuberant granulations shooting up from their centre, as in Plate XXXIV. fig. 2. In other cases the ulcerations are sloughy in their centres, and their edges of a very dark colour. Some of the ulcerations seem to have arisen chiefly from the extension of the inflammatory action to a part or parts of the subjacent cellular tissue, and to the consequent destruction of the mucous surface covering the parts thus affected. The appearances in Plate XXXVIII. illustrate this condition, as well as some other stages and forms of the ulcerative process. As to the situation of these ulcerations, it may be stated, that they are generally most remarkable, both in respect of size and number, in the cæcum, and next so in the sigmoid flexure of the colon and rectum. But the left arch, ascending and transverse portions of the colon, and indeed every part of the large bowels, are often very deeply ulcerated. Sometimes the ulcerations have destroyed no more than the mucous surface, at other times they have made their way to the peritoneal covering of the bowel, and occasionally they have entirely perforated its coats.

In almost all cases of ulceration of the large bowels, the parts ulcerated are softened or more friable, so that they are readily torn upon forcible extension; and if the parts situated between the ulcerations be inflamed, as they generally are, they are also lacerated with ease. Want of the cohesion characteristic of healthy textures seems to be generally present in nearly all instances of the disease accompanied with acute inflammation, or any of its consequences.

Besides the general appearances characteristic of inflammatory action, or resulting from this state, which we have now described, the coats of the large bowels seem much thickened. This is particularly observable in the sub-acute and chronic cases of the disease. A certain degree of tumefaction or fulness of the inner coats of these bowels seems to depend upon the inflammatory state, and to arise from the general injection of the vessels, and effusion of fluid in the cellular tissue connecting their various coats. A thickened condition of the large bowels is, however, not uniformly remarked: in some few cases their parietes seem thinner than they are even in the healthy state, and are, at the same time, ulcerated to a greater or less extent. Occasionally, one part of the viscus is evidently thinner than natural; whilst another portion is much thickened and as if corrugated, as in Plate XXXIV. fig. 1.

The colour of the internal surface of the large bowels varies very much in different cases, as well as in the same case. In some it is of a very deep red, streaked transversely, and dotted in parts with a darker tint; the edges of the deeper ulcers, and the centres of those in the incipient stages, being of a still darker colour. Sometimes, intervening between large portions of deeply inflamed and ulcerated colon, the mucous surface presents a pale, greenish-yellow hue, with or without small specks of ulceration, as in Plate XXXVIII. Occasionally, the intensely red colour is variegated by the different shades presented by the slight duplicatures and corrugations of the mucous surface of the bowel, and gradually passes into a yellowish or vermilion-red, and thence into a darker shade, indicating the transition to the sphacelated state, as shewn in Plate XXXIII. In some cases, nearly the whole of the mucous surface of the cæcum and colon is of a greenish hue, and presenting every depth of shade from a pale grass-green to an olive colour; in some parts the deeper shades of green are interspersed with patches of a fine rose-colour: in these latter the mucous tissue possesses its natural organisation, whilst, in the former, its cohesion and structure are entirely destroyed, and it is in all respects in the first stage of gangrene.

In some of the more chronic or sub-acute cases, the internal surface is

of a very deep reddish-brown, passing in some parts to a black colour; in others the mucous coat is of a very dark olive hue, or of a deep bottle-green, passing into a black in numerous places, and finely streaked and spotted with black, and sparingly studded with red spots and with fungus-like ulcerations, as in Plate XXXIV. fig. 2. In some instances the ulcers are nearly black, more particularly their edges, much elevated, and the coats of the bowel in their immediate vicinity greatly thickened and inflamed, whilst the intervening surface presents every shade of colour, from a pink to a rose-colour, scarlet, and deep brick-red, and red streaked with black, as in Plates XXXVI. and XXXIX. In other cases, the mucous surface of the cæcum and colon, and occasionally of the ilium also, is of a black hue, interspersed with spots of a brick-red colour, and with elevated ulcers of a somewhat lighter shade in the centre (see Plate XXXI. fig. 2). The colon, in some of the more chronic cases, is of a reddish-brown, shaded with black, as shewn in Plate XL. fig. 2, and studded with small ulcers of a paler colour, or with larger ones having an inflamed and sloughing base, or with both. In other chronic cases, the internal surface of the large bowels is partly of a pale-violet colour, variously clouded or streaked, and passing abruptly into a deep bottle-green: occasionally, this latter colour occupies nearly the whole internal surface of the colon, and is of a gristly or semi-cartilaginous consistence, as in Plate XL. fig. 1.

When the internal surface of the colon is of a pale-gray or sea-green colour, either with or without ulceration, an extenuated state of its parietes is, as we have already remarked, occasionally observed. In addition to these appearances, the coats of the bowel are often torn with ease, even although marks of inflammation, with the exception of the atonic ulcers previously described, are by no means visible.

In some cases, when inflammation of the internal surface of the cæcum has proceeded through the tunics of the bowel, the cellular substance, external to it and connecting it with the psoæ muscles and parietes of the iliac region, becomes inflamed, abscess forms in this situation, and is detected after death, if it has not opened into the cæcum, and discharged itself during the life

of the patient. The *appendix vermiformis*, besides being inflamed externally, and adhering to the cæcum or adjoining parts, is often internally ulcerated, contracted in size, easily lacerated, and occasionally almost sphacelated.

Having noticed what seems to be most remarkable in the condition of the cæcum, colon, and rectum, as disclosed by the *post-mortem* examination of cases of dysentery, we next proceed to offer some brief observations on the states of the adjoining viscera. The appearances which we have already described are those which are most immediately related with the dysenteric affection, and which constitute the whole organic derangement usually found in the simple or uncomplicated form of the disease. Those lesions which we are about to notice are chiefly observed in the complication of dysentery with affections of the liver, and in those forms of the disease which supervene either in the progress of fevers, or during convalescence from them.

In addition to those lesions of the large bowels now described, the liver often presents some one of the various changes which were noticed in the First Volume of this work, when the diseases of this organ were the subjects of inquiry. In the complication of hepatic disease with dysentery, so frequently met with in the East, and indeed in all warm climates, the association of structural changes of the liver with disorganisation of the large bowels is constantly observed: it is this complication of lesions which constitutes the true hepatic dysentery. When the liver is found diseased, in fatal cases of dysentery, the small bowels are frequently diseased also, especially when the morbid changes existing in the liver are of a chronic kind. In complicated organic changes of this kind, it is presumable that the morbid secretions proceeding from the liver had been a cause of irritation both to the small and to the large bowels, and that these secretions had made their chief impression upon the latter in consequence of the greater predisposition to morbid change, arising from accumulation of fæcal matter in the large bowels, and from the remora which the substances poured into them generally experience from their situation and structure. The great irritability which the small intestines possess, and, consequently, the quick passage of their contents along their canal,—a quickness promoted by the situation and

loose connexion of these viscera,—are circumstances which are very influential in preserving them from suffering from the irritating effects of their contents in so marked a manner as the large bowels, although by no means exempting them from all disorder. That they do suffer, however, in a very marked manner, when the liver is diseased in dysentery, is a matter which is frequently shewn by *post-mortem* examinations; for they generally exhibit marks of inflammatory action having existed in their mucous surfaces, and sometimes the inflammation extends through all the tunics of the intestine to the peritoneal surface,* and is even attended with ulceration of the inner coats. In a word, in cases of dysentery complicated with organic change in the liver, the small intestines frequently exhibit appearances of disease similar to those described when inflammation of these viscera were treated of.†

Besides the external appearances of inflammatory action in the small intestines, this part of the alimentary canal is often extremely constricted: in some cases this constriction is very limited in extent, in others it exists along a considerable portion of the intestine:‡ rarely, the constriction has the appearance of having been made by a ligature, from the limited space affected, as in Plate XXII. fig. 3.

The mucous surface of the small intestines is very frequently more or less inflamed in cases of dysentery complicated with disease of the liver, as shewn in Plate XXXV.; and in conjunction with appearances of inflammatory action, ulceration is not infrequently observed, particularly in the lower part of the ilium, and at its termination in the cæcum, as depicted in Plates XXXIV. fig. 1. and XXXI. fig. 2. In the simple form of dysentery, however, the inflamed state of the digestive mucous surface generally terminates abruptly at the valve of the colon,—the lower portion of the ilium, and indeed the whole of this intestine, being exempt from appearances of inflammatory action. In some fatal cases of dysentery, the spleen is found

* The external appearances of the small intestines when inflamed, in some cases of this description, are well shewn in Plates XXII., XXIII., XXIV., XXV., and XXX.

† See the section on Inflammation of the Small Intestines, page 24.

‡ See Plate XXXIII. fig. 1.

diseased ; in others, the pancreas ; and, on a few occasions, both the spleen and pancreas ; and lesions of these viscera have not only been observed associated with the disease of the large bowels constituting the dysenteric affection, but also with affections of the liver and small intestines.

Inflammation and enlargement of the mesenteric glands, more particularly of those situated in the meso-colon, are very frequently found in the examination of fatal cases of dysentery, especially in the more chronic forms of the disease, and in subjects who have experienced frequent attacks. The morbid states of the glands seem to proceed chiefly from the irritation of the mucous surface of the intestines, and the determination of blood to the parts in their vicinity and immediately surrounding them.

When the disease has involved the serous covering of the bowels, the mesentery also frequently presents greater vascularity than natural ; and in some few cases coagulable lymph has been found upon its surface, even although the ulcerations of the bowels have not entirely perforated their coats. This state of the mesentery is oftenest remarked in the complicated forms of dysentery, and when the disease supervenes in the progress of fevers, or during convalescence from them. The appearances most frequently observed in dysentery occurring in these circumstances, are but little different from those already described. The small intestines, however, are generally more than usually affected in such cases, and very often exhibit ulcerations in various stages of their progress. In many cases, the ulceration of the small intestines is attended with appearances of active inflammation of their mucous surface : in other cases, the inflammatory action had evidently subsided in the small bowels soon after the affection of the large ; for small ulcers have been observed in the former, some having a cicatrised form, others a pale aspect, without evidences of much increased vascularity of the intervening parts, whilst the cæcum, colon, and rectum, were very deeply inflamed and ulcerated, or even sphacelated. Here the succession of phenomena seems obvious : the febrile disease, in such cases, was attended with a relaxed state of the bowels, marking the disease of the mucous surface of the small intestines ; and as the inflammation extended to the large bowels, so the dysenteric symptoms supervened, and the disease assumed a new character.

The cases of dysentery occurring during the progress of, or upon convalescence from, fevers, sometimes also present us with additional appearances of disease in the liver, pancreas, spleen, stomach, and still more frequently in the mesenteric glands. But these appear to be rather contingent affections, and are not constantly met with. The diseased state of the mesenteric glands is more uniform, but consists chiefly of simple enlargement, sometimes with signs of inflammatory action, and occasionally with a sero-purulent-like infiltration of their substance and of the cellular tissue surrounding them: sometimes they are of a much darker colour than natural.

The derangement of the urinary organs usually accompanying dysentery would lead us to expect marks of disease in them upon examination after death; but these organs seldom present much structural change. Occasionally, however, the peritoneal surface of the urinary bladder is inflamed, and its coats contracted and thickened: sometimes the prostate gland is somewhat enlarged, and the neck of the bladder inflamed,—effects evidently proceeding from the diseased state of the adjoining viscera.

SECTION V.

Of the Treatment of Dysentery.

THERE are few diseases in which the advantages proceeding from the employment of decided measures at an early stage of the malady are more conspicuous than in the forms of dysentery which come before the intertropical practitioner. The nature of the disease, and the consequences which generally supervene in its progress, are such as absolutely require early and active measures in its treatment. It is not, either in its essence or its tendencies, like unto many maladies of temperate climates, which will frequently bring about their own cure, if not materially interfered with. On the contrary, if

left to nature, or improperly treated, it necessarily tends to the disorganisation of the viscera which are its seat, and, consequently, to the destruction of life. This consideration alone, independently of any other, should be sufficient to stimulate the exertions of the practitioner in his endeavours to remove the disease, in whatever form it may present itself, or however mild its symptoms may seem.

The observations which we shall offer on this very important subject will, *first*, refer to the simple and acute form of the disease; and, *secondly*, to its association with affections of the liver. Those modes of cure which have a stricter reference to the chronic state of dysentery will be considered hereafter; and as to the management of the dysenteric symptoms supervening in the course of fevers or complicated with scurvy, due notice will be taken of these occurrences in subsequent sections of this Volume.

First. The treatment in the uncomplicated dysentery must, in a great measure, be accommodated to the period or stage of the disease; and directed so as to accomplish certain intentions founded upon the pathology of the disease. The indications of cure, which we should propose to ourselves, are — *first*, to remove offending matters from the large bowels; and, *secondly*, to guard against the supervention of inflammation, and to remove it if it have supervened. To these may be added other indications of a subordinate nature; but they are chiefly beneficial in either directly or indirectly promoting the two great objects now stated. We shall not, therefore, particularise them until they come under consideration. It should, however, be recollected, that the measures which tend to fulfil one of the above intentions generally assist in the accomplishment of the other. We cannot, therefore, consider each of these indications of cure separately, without falling into unnecessary repetitions; but we may review the means which tend most essentially to fulfil them, with reference to the period and state of disease, and to the objects which we desire to attain.

If the patient comes under our care when the premonitory symptoms of disorder are present, — when the bowels are first disordered, and he com-

plaints of chills, followed by slight flushes, coldness of the back and loins, &c.,—the exhibition of an ipecacuanha emetic, followed in a few hours by twenty grains of calomel, and this in two or three hours more by a purging draught and an enema, is often of the greatest benefit. At this time also the warm bath is of great service, by determining the circulation to the external surface of the body, and taking off spasm, whilst the evacuating remedies directed to the *prima via* unload it of those accumulations which are so frequently instrumental in producing the disease.

When acute dysentery is fully developed, and the patient complains of a sense of heat, burning, soreness, pain, tormina, &c., then depletion is absolutely requisite, and the sooner it is employed after the supervention of those symptoms, the more likely is advantage to be procured from it. The above symptoms are sufficient of themselves to require its adoption, if the pulse be but little accelerated and the patient not plethoric; and if he have been resident for a considerable time in the climate, local depletions, followed by hot fomentations or warm poulticing, when the leech-bites have ceased to bleed, will generally be sufficient. Depletion to a great extent, or at least to a sufficient extent, may be practised in this way. But if the patient has recently arrived from Europe, if he be of a full habit, if the pulse be full, hard, and irritable, if the tormina be violent, and pain fixed and increased on pressure,—a full blood-letting from the arm should always precede the application of leeches to the abdomen.

If the first blood-letting be sufficiently large, a repetition of the operation will be seldom necessary. When, however, the quantity taken away has been moderate, a second general depletion is often required, particularly if the above symptoms are not relieved. The sensations of heat, burning, and soreness, in the course of the colon, have been improperly overlooked by many as indications of inflammatory action, and, consequently, as pointing out the necessity of resorting to blood-letting for the cure of the dysenteric disease, of which they are so generally symptoms. When these sensations are felt by the patient, local depletions at least ought never to be dispensed with, unless the disease has advanced to its last stage, and the energies of

the system are inadequate to sustain further evacuations; and even under such circumstances, the application of only three or four leeches will often be of service.

The copious discharge of blood by stool, characterising the disease, should never prevent us from resorting to vascular depletions; for it ought to be remembered, that when the acute form of dysentery is treated actively by means of depletion at its commencement or in its earlier stages, great losses of blood by stool seldom occur; and even although such discharges may have already taken place, they should not prevent the adoption of blood-letting, if no other symptoms are present to render it improper; for by resorting to it, either generally or locally, further losses in this way are prevented, and the internal surface of the bowels is thus indirectly guarded from sustaining injury. Indeed, depletions ought to be adopted in the dysenteric hæmorrhage upon similar principles to those which guide us in resorting to it in the hæmorrhage from the lungs.

In old residents in warm climates, and in the native inhabitants, the application of leeches to an extent suitable to the circumstances of particular cases is sufficient for all the purposes which blood-letting is calculated to fulfil. But in these subjects particularly, the local depletion must be made very early in the disease, and before the energies of the system are much impaired.

In addition, also, to early depletion, the practitioner should endeavour to procure a full evacuation of the bowels. With this view, twenty grains of calomel combined with one or two of opium should follow the first depletion, whether that be local or general, and a few hours afterwards a purging draught, assisted by an injection, should be administered. The previous exhibition of the calomel and opium generally allays the irritability of the stomach if this symptom be present, removes spasm, and prepares the morbid secretions of the liver and bowels for removal by means of the purgatives which are to follow. So long as we are convinced, by a careful inspection of the stools, that feculent matters continue in the cells of the colon, so long

must we persist in the exhibition of purgative remedies. The appearances which chiefly indicate the existence of this source of irritation are, a foul and loaded tongue, fulness of the abdomen, especially in the caput cæcum coli and course of the colon, the presence of broken-down fæces in the stools, or pieces of fæces mixed with a watery-brownish serum, and a slimy mucus at the bottom of the vessel. Whilst these matters remain in the bowels the cause of disorder continues; and all measures adopted to remove it while they are retained, will only exhaust the powers of life, without making any important advances upon the disease.

The means which should be employed in order to evacuate these morbid accumulations ought also to be calculated to relax the spasmodic action of parts of the colon, which generally accompanies the dysenteric affection. Hence the propriety of combining the calomel with opium, and of following the exhibition of purgatives by the mouth with laxative, emollient, and antispasmodic injections. The relaxing effects of hot poultices and fomentations after local depletions are also beneficial, and tend essentially to procure a free action of the bowels, and to moderate the attendant tormina and tenesmus.

The employment of purgatives, especially of calomel and opium, at bed-time, followed by a purgative in the morning, and a laxative and emollient injection shortly afterwards, should be continued as long as the state of the evacuations, and the tormina, &c. indicate the retention of morbid matters in the *prima via*. One of the chief reasons for the exhibition of calomel with opium at bed-time is the influence it generally has in procuring a quiet night for the patient, mitigating the severity of the symptoms, and in diminishing the frequency of the calls to evacuation, whilst it renders the motions more free and copious afterwards, and promotes the determination of the circulating fluids to the surface of the body.

Soon after the exhibition of the calomel and opium at bed-time, a small anodyne enema may be thrown up with advantage, as it generally assists the operation of the calomel and opium in procuring rest during the night,—

an object of the utmost importance in the treatment of diseases in a warm climate, particularly when the nights are chilly and foggy. It should always be the aim of the practitioner to moderate the harassing efforts to stool during the night; for nothing tends more to exhaust the patient, and to bring on an adynamic state of the system, than the want of sleep thereby occasioned, and the irritative state of fever which it induces. Besides, the patient is much exposed to the cold, chilly, and foggy night-air, by often leaving his warm bed, frequently when in a state of perspiration. These considerations have led us to adopt such measures as we found most influential in procuring rest and sleep to patients labouring under dysentery, whilst we have given purgatives and injections early the following morning, with a view of diluting and evacuating offensive and irritating matters lodged in the cæcum and colon.

The debility so generally supervening in the progress of dysentery has been urged as an objection to the remedial measures which we have now recommended, especially to the vascular depletions. But debility, and the other unfavourable symptoms which supervene in this disease, are much more frequently met with when depletions are neglected; and the acute form of the malady oftener terminates in chronic dysentery and diarrhœa, even when the life of the patient is saved, when these means are neglected, than when they are employed.

On this topic we have the following explicit statement from a most candid, scientific, and zealous practitioner, Professor Ballingall, whose experience of the diseases of India has been very extensive, and guided by a sound judgment. This eminent physician states, in his important work on the diseases of India, when speaking of general blood-letting, that, “ of the few cases of dysentery in which I have employed bleeding, the majority have, I think, terminated favourably; and of those in which the result has been fatal, the appearances on dissection have been such as to excite a sentiment of regret at not having carried the evacuation further:” and in another part, he observes, with reference to a communication which we made to him on the subject of local blood-letting in the disease:—“ During

the period which I remained in India, subsequent to the receipt of the above letter, I had several opportunities which I considered favourable for the application of leeches to the surface of the abdomen, and in all of them the practice was attended with decided benefit; the pain and tension, as well as the bloody discharges by stool, being immediately diminished." *

We have mentioned the necessity of evacuating the morbid matters accumulated in the large bowels, and in many instances producing the disease. We shall now notice the remedies which seem to us the best suited to the accomplishment of this intention. If the disease comes under treatment early in the day, a scruple dose of calomel should be immediately administered, and repeated at bed-time, with about two or three grains of opium. About three hours after the first dose of calomel, either a dose of castor oil, or of powder of jalap with supertartrate of potash, should be given, and followed, in about an hour, with any purging enema. If these do not act sufficiently in a few hours, both the purgative and the injection should be repeated through the day. These means will frequently procure free evacuations from the bowels during the afternoon or evening of the day on which they have been exhibited; and the calomel with opium, and the anodyne injection, administered at bed-time, will tend to procure sleep and a quiet night for the patient. We prefer the compound jalap powder, castor oil, the soda tartarizata, and the bitter aperient mixture, contained amongst the formulæ given in the First Volume, to other purgatives, as being the most efficacious in procuring substantial motions, and in removing feculent accumulations. The supertartrate and tartrate of potash, when given in large doses, and combined with any of the preparations of senna or jalap, are particularly serviceable in this respect, especially when the patient is much harassed with tenesmus. The common neutral salts, uncombined with the vegetable purgatives, are seldom productive of much advantage, but often, on the contrary, increase

* Practical Observations on Fever, Dysentery, and Liver Complaints, as they occur amongst the European Troops in India, by George Ballingall, M.D., F.R.S.E. &c. &c. p. 79.

disorder when too frequently employed, and reduce the strength by the watery motions which they produce.

If the patient is brought before us late in the day, with the disease fully developed, but not in a too far advanced stage of it for active treatment, a full dose of calomel should be prescribed, the depletory measures recommended immediately adopted, and followed with the application of hot poultices, fomentations, or the warm bath. The calomel should be repeated immediately after these means have been employed, in combination with a full dose of opium, and the patient left to repose for the night. If there be urgent tenesmus and frequent calls to evacuation, an anodyne injection may be also thrown up. Early on the following morning the purgative medicines recommended should be administered, and repeated so as to procure copious substantial evacuations from the bowels.

Not only is the choice of purgatives attended with much difficulty, but the frequency of repeating them, and the length of time during which they should be exhibited, are also matters requiring great discrimination. We seldom or never have found it necessary to repeat the purgatives mentioned above, oftener than once in the day, after the first day of treatment, a full dose having been prescribed early in the morning. The time during which this practice has been continued has depended upon the duration of the symptoms indicating the existence of morbid and irritating accumulations in the large bowels. Care should, however, be taken not to mistake the irritation and tenesmus accompanying inflammatory action of the sigmoid flexure of the colon and rectum, for the disorder occasioned by the lodgment and retention of faecal matters; for in this case, the too frequent or long-continued exhibition of purgatives would be extremely detrimental.

Amongst the means resorted to, either to evacuate freely the large bowels, or to allay irritation of them, there are none more beneficial than injections. When the former end is desired, gently purgative injections should be preferred; and amongst these, none is more deserving of notice than the decoctum

lini with the tartrate of potass, or the soda tartarizata, and the decoctum oryzæ with the oleum olivæ, or with the oleum ricini. All irritating substances should be discarded. If the practitioner wish to dilute the contents of the large bowels, and soothe their internal surface by means of emollient and demulcent substances, then the injections should be large. When it is his object to procure the evacuation of their contents, this end will be best attained by injections of moderate bulk, seldom exceeding that of twelve ounces, or less than six; and they should be thrown up steadily and forcibly, without attempts to remove the instrument for some time.

In the irritated state of the large bowels characterising this disease, the injection of a large enema generally occasions re-action of their muscular coats upon the distension occasioned by it, and it seldom is productive of any other advantage than that of diluting the fluid matters it may meet, and of washing away a part of the irritating substances which these viscera may contain. But even this is an object worth obtaining, and should not be neglected.

When we wish to allay the irritation of the bowels, and of the system generally,—one of the principal objects which is required to the removal of the disease,—we cannot adopt means more efficacious than the injection of anodyne enemata. Of these emollient substances, as the decoctum lini, decoctum oryzæ with mucilage, combined with opium, or with the extractum conii or extractum hyoscyami, are preferable, and should be administered in small bulk, so as to be retained sufficiently long for the production of their full effects. Enemata of this kind should seldom be more than four or five ounces, and we have frequently directed them to be as small as two. They ought, however, to be repeated frequently.

It will always be advantageous to determine the circulation to the surface of the body, and thereby to take off the tendency of the fluids to flow to the seat of disease. This end is partly accomplished by the combination of calomel and opium taken at bed-time, as already recommended; and it may be farther promoted by the addition of a little of the pulvis antimo-

nialis, or James's powder, or of a grain of ipecacuanha, to these remedies. This is an indication of cure which is obviously recommended to our adoption by a consideration of the nature of several of the exciting causes of the disease, and by the phenomena supervening in the system immediately previous to, and at the commencement of, attack. Amongst the most useful means to accomplish this intention is the administration of Dover's powder by the mouth, either in small and repeated doses, or in large doses given at longer intervals. The saline mixture, composed of the camphor julap, liquor ammoniæ acetatis, spiritus ætheris nitrosi, and the vinum ipecacuanhæ, given every two hours, is also extremely beneficial.

When the stomach is irritable, it will generally be found advantageous to give sudorifics or diaphoretics in as small a bulk as possible. In cases of this description, a full dose of calomel combined with two or three of opium generally allays the irritability of the stomach; after which small doses of antimony, or of ipecacuanha combined with opium, may be continued, until a full effect upon the skin is produced.

In the majority of cases, the ipecacuanha will be found preferable to antimony as a sudorific in this disease. When the stomach cannot bear the ipecacuanha and opium in doses sufficient to produce a free effect upon the skin, much benefit will sometimes be derived from using an infusion of ipecacuanha in the form of enema, either alone or in conjunction with opium. Sometimes the exhibition of opium, with the view of obtaining either its anodyne or diaphoretic effects, produces considerable disorder of the functions of the brain, with excitement and determination to this part. When such is the case, the combination of this remedy with camphor will generally be found advantageous, both in counteracting these unpleasant effects, and in obtaining the results which we intend to produce.

Having exhibited the calomel and opium at bed-time, given a purging medicine early in the morning, and administered such enemata as the particular circumstances of the case require, the employment of the remedies now recommended in order to determine the fluids to the external surface

of the body, should be assiduously persisted in through the day; and when the patient is disturbed in the night, they may be given in conjunction with an anodyne, or a small anodyne enema may be thrown up.

Tepid and warm bathing are often serviceable after the antiphlogistic means now specified have been put in practice, and tend to promote the action of the diaphoretic remedies, and to relax the external surface of the body. The temperature of the bath should not be so high as to excite the system generally, but of that moderate heat which is most efficacious in subduing irritability and in equalising the circulation. After coming out of the warm bath, the patient should be kept as much as possible from currents of air; and the determination to the surface of the body ought to be promoted by the use of warm mucilaginous diluents and the diaphoretics already named.

The warm bath also is often extremely efficacious, when employed in addition to the means specified, in relieving the tenesmus and tormina characterising the disease, and in diminishing the frequency of the calls to stool. When either strangury or dysuria is present, it ought never to be neglected, as it is also one of the most efficient means we can adopt for the purpose of relieving these very distressing symptoms. If resorted to shortly before bedtime, and followed by the dose of calomel and opium, and a small anodyne enema, it is always influential in procuring sleep and a quiet night for the patient,—one of the most requisite objects which can be attained.

When the practitioner conceives that the purgatives exhibited early in the disease, and the general or local blood-lettings, followed by the remedies commented upon, have removed offending matters from the bowels, and subdued inflammatory action; and when the symptoms seem chiefly to proceed from a sore and irritable state of the bowels remaining after active disorder is subdued,—the application of a large blister upon the abdomen is generally followed by much advantage. When, however, the signs of active disease still remain, and the patient complains of frequent or painful micturition, blistering the abdomen is seldom productive of benefit, but often, on the contrary, adds to the general febrile excitement of the system, and to

the painful symptoms connected with the urinary organs. Prescribed with the view of removing the disorder remaining after the successful operation of the more active means already detailed, and to subdue the irregular spasmodic actions to which the colon and rectum are liable, from the passage of morbid secretions and fæcal matters over their sore and irritable internal surface, blisters are extremely beneficial, and should never be omitted under such circumstances.

As the disease advances, pain in the cæcum and course of the colon not infrequently supervenes, even although vascular depletions and purgatives have been judiciously employed in its early stages. When this is observed, the application of leeches is necessary, and their number should be according to the severity of the symptoms, strength of the patient, and the general character of the pulse and other symptoms. After the bleeding from them has ceased, warm poultices should be assiduously employed, and afterwards followed by a blister. Under such circumstances, the lowered strength of the patient should not altogether deter us from the application of a few leeches, for the advantages accruing from the application of them, and from the means by which they should be followed, will much more than compensate for any increase of debility which they may occasion.

In the far-advanced stage of the disease, after the above measures have been employed without deriving from them those advantages which they are calculated to afford, and generally do afford; or when the patient has been neglected or injudiciously treated at the commencement of the malady, the existence of ulceration of the large bowels, either in its incipient or farther-advanced stages should be dreaded; but we ought not on that account entirely to despair of the recovery of the patient, although an unfavourable termination is more likely to supervene. We have known many cases of recovery wherein the symptoms clearly indicated the existence of ulceration; and even after large portions of the mucous surface of the large bowel had been detached and evacuated with the discharges. Until unequivocal signs of approaching dissolution are present, our means of cure should be administered zealously and unremittingly, and be judiciously selected and applied, according to the symptoms which may supervene.

At this period of disorder, the warm bath; blisters over the abdomen; emollient, mucilaginous, and anodyne enemata; small and frequently repeated doses of Dover's powder; injections of the infusion of ipecacuanha with opium, or of a weak infusion of bark and rhubarb; warm poultices over the abdomen; the use of the diaphoretic mixture already noticed; the infusion of catechu given internally or as an enema; and camphor, with ipecacuanha and opium, are often very serviceable. When there is evidence of morbid secretions and faecal matters still remaining at this stage of the disease, a full dose of calomel and opium may be given at bed-time, in addition to the employment of some of the above remedies, and followed early in the morning either by a full dose of the compound jalap powder taken in aromatic water, or of rhubarb and calcined magnesia. If either of those seem not to answer the purpose intended, a full dose of castor oil may be substituted for them.

Amongst the Natives of India, who are subject to the form of dysentery now under consideration, local depletions only can be attempted; and they can seldom be carried to a great length. Purgatives are indispensable at the commencement of the disease, and should be preceded, in many cases, particularly on the invasion of disorder, by an emetic. Afterwards, the use of diaphoretics and anodyne injections will often of themselves effect a cure in the slighter cases. In the more severe attacks, the full dose of calomel and opium should be given at bed-time, and be followed early in the morning by a purgative draught and a laxative injection. When offending matters seem to be removed, we should then chiefly trust to the use of diaphoretics, anodynes, and gentle tonics. The warm bath and blisters to the abdomen are also beneficial in the course of the disease.

As the treatment of the simple dysentery must assume a somewhat modified character in long residents in the climate from that which is requisite amongst recent comers; and as it must necessarily be more antiphlogistic in the latter than in the former, so must the modification be still greater amongst the natives of the country. Their original conformation, habit of body, and modes of life, whilst productive of a modified form of the disease, necessarily call for a varied method of cure from that which is

indispensable in the European constitution. Amongst the natives of India, antiphlogistic remedies, more particularly blood-letting, can neither be carried so far, nor be so frequently repeated, as in the European residenter. In the majority of cases it is only admissible when resorted to early in the disease, in a local form, and to a very moderate extent. When the acute stage is overcome by means of a gentle antiphlogistic method of cure, consisting chiefly of purgatives, diaphoretics, and anodynes, it will generally be requisite to prescribe for them warm cardiacs and stimulants combined with laxatives and tonics.

The habits of the natives of the country should always be regarded in the treatment of the diseases to which they are liable; and in none is this object more necessary than in the cure of dysentery as it occurs in them. Their habitual use of the warm spices of the country, and of the astringent tonics, such as catechu, betele,* &c. indicates the necessity of employing these substances, both by the mouth and in the form of enemata, and of combining these or other warm stimulants and tonics with anodynes, in the progress of the disease. Even when we see occasion to employ purgatives so as to act efficiently, which is often requisite in them as well as in Europeans, they should be given in combination with warm spices. With respect to the choice of purgatives for this class of the Indian community, little distinction from those already recommended need be made. The combination of calomel with rhubarb and powdered ginger is extremely useful. The compound jalap powder with ginger or spice, the bitter aperient mixture with tincture of cardamoms and of ginger, and castor oil, may be employed without distinction.

The only medicines of this class to which we object in the treatment of dysentery are the different preparations of colocynth and aloes. They generally tend, both with Europeans and natives, to augment the straining and tenesmus, particularly if they be frequently repeated. A similar objection may be urged against the sulphate of magnesia, if given alone; but when

* The betele-nut is the produce of the *areca catechu*, and when dried is habitually chewed, with the leaf of the *piper betele*, by the natives of India. A little quick-lime is generally added to the nut and leaf. The effects of the whole are sialogogue, tonic, astringent, carminative, and exhilarating.

employed to quicken the operation of the infusion of senna, or of the infusions of senna and gentian, this objection cannot be urged against it. In many cases, however, the sulphate of soda, or the tartrate of potash and soda, will be found less objectionable.

Secondly. The *treatment in hepatic dysentery* must be conducted upon the same principles, and nearly in the same manner, as we have inculcated in the simple form of the disease; but with the additional indication of removing the affection of the liver, on which that of the bowels chiefly depends. In almost all cases of this complication, vascular depletions, either general or local, or both, according to the circumstances of the patient, will be required; and it will not infrequently be found necessary to repeat the local blood-lettings during the progress of the disease, as symptoms may occur requiring them. After depletions have been decidedly instituted, and the bowels evacuated in the manner recommended, our next object is to change the morbid state of the biliary secretions, which, if they have not produced the dysenteric disorder, at least tend to perpetuate it. This condition of the bile generally arises from inflammatory action going on in the liver; therefore, the antiphlogistic measures which we have advocated are the first step which ought to be adopted in order to remove it. Vascular depletions, carried to an extent compatible with the state of the patient, act beneficially, both in removing disordered action of the liver and bowels, and in preparing the system for the operation of those remedies which are to follow. Of these, the most important are the preparations of mercury, when judiciously employed.

The complicated form of dysentery is that more generally prevalent amongst the older European residents in a warm climate, particularly in India. In them general depletions are seldom admissible; but local blood-lettings, carried as far as the state of the patient seems to require, and repeated when necessary, cannot be omitted; and when judiciously prescribed, and followed by antiphlogistic remedies and other means necessary to remove the disordered state of the bile, will be the chief agents in curing the disease.

In this form of dysentery, the exhibition of calomel internally, conjoined with opium; the inunction of the mercurial ointment, combined with camphor, on the region of the liver and abdomen; and the application of it upon the surface of the warm poultices which follow the local depletions, (and which should be frequently renewed, and continued for a considerable time,) are the means which are generally most efficacious in changing the morbid state of the biliary secretion. But these means should be employed early in the disease, and with much caution; for if they fail of inducing a decided effect upon the salivary glands, after they have been prescribed sufficiently long for this purpose, and are still persisted in, they may be, and indeed often are, productive of much mischief.

When treating of the simple acute dysentery, we have not mentioned the employment of the preparations of mercury with the intention of producing their specific effects upon the constitution, because we believe that these effects are not necessary to the cure of this form of the disease. The exhibition of large doses of calomel, either alone or combined with opium, which we have recommended, was with the view of correcting the biliary and intestinal secretions, and of preparing them, and the surfaces on which they are lodged, for the operation of the purgatives which are afterwards exhibited. If the mouth become affected after this mode of employing the remedy, the circumstance may be looked upon as favourable, especially if the secretions, stools, and other symptoms, become ameliorated about the same time. If these effects be produced without any action upon the mouth, we nevertheless conceive that the medicine is producing an equally beneficial effect, and one less likely to depress the powers of life, which should be preserved throughout, as far as may be consistent with the speedy removal of the disease. When the affection of the liver, in the complicated dysentery now under consideration, is of that kind which seems to require the mercurial influence to be exerted upon the mouth and salivary apparatus, this influence, as we have stated when treating of the diseases of the liver, should be speedily induced; and if this object is not accomplished within a short period, especially when sufficient vascular depletion and purging have been premised, the exhibition of mercurials ought to be laid aside.

Mercury, when given, either in simple or complicated dysentery, late in the disease, with a view of affecting the system, or when its exhibition is continued with this intention for too long a period, often seems to precipitate the malady to an unfavourable termination, by inducing or keeping up irritative fever, and by lowering the powers of life. In the advanced stages especially, the strength of the patient often sinks rapidly from the exhausting nature of the disease; and if this effect be not promoted, it certainly is not retarded by the influence of mercury upon the system, when it fails of speedily producing its derivative action upon the salivary glands. When this powerful agent is thus injudiciously employed and persisted in, the powers of life seem to have an additional enemy to the disease to contend with; and it is sometimes difficult to say which is the most instrumental in producing the unfavourable result. When blood-letting has been previously resorted to and carried to a sufficient length, then the mercurial action, if it be at all likely to be serviceable, will soon be induced; but as long as active inflammation remains, or if abscess have been formed in the liver, the mercurial action will not take place; irritative fever, of an exhausting nature, will be the consequence, and the powers of the system will be thereby exhausted.

In those cases where the symptoms have disappeared upon the super-vention of the ptyalism, it often seems rather that the mercurial action is to be imputed to the previous subsidence of disease, than that it has caused this result: instead of being a cause of recovery, the mercurial influence is merely one of the first effects of a favourable change in the course of the malady. Numerous cases of disease in the liver, both occurring alone and complicated with dysentery, have come before us, and some have been detailed, where, after a continued and active employment of mercurials, with a view of affecting the system, their influence was produced not only upon the mouth, but also upon the salivary glands, and yet the disease was not arrested thereby, but even ran its course more rapidly to an unfavourable termination.

In the uncomplicated form of dysentery, where inflammatory action

exists in the colon, it must be reduced by previous depletions, and the morbid secretions lining the internal surface of the intestines removed by purgatives, before the mercurial action can be produced; and when these preliminary objects are attained, what further effect is to be desired from inducing the constitutional influence of mercury? The most frequent consequence following upon the induction of this influence is a protracted recovery, from the diminished energy of the powers of life, occasioned more by the mercurial action than by the disease. When the effect of mercury upon the system rapidly supervenes, we are disposed to view it entirely as resulting from a mild form of disease, the local inflammatory action and attendant fever being insufficient to counteract the influence of this medicine upon the constitution.

In the complication of dysentery, however, with hepatic disease, the case is different. Here there is generally a morbid secretion of bile, either accompanied with, or independent of, organic disease of the biliary organs; and the object of the practitioner is to remove irritating matters from the *prima via*, as well as to correct the morbid secretions and functions of the liver. In order to accomplish these ends, mercurial preparations must be employed in such a way as shall the least disturb the energies of the digestive organs, and of the frame generally. The exhibition of scruple doses of calomel at bed-time, followed by a purgative in the morning, is the most likely, as far as our experience has informed us, to fulfil these objects; it tends to improve the state of the intestinal secretions as well as those proceeding from the liver; and if the functions of this organ be either torpid or vitiated, it tends more decidedly to promote secretion, and to restore it to a healthy condition, than any other mode of employing this remedy, or any other measure with which we are acquainted; and in the event of inflammatory action or abscess existing in the liver, or still remaining after the more acute symptoms have been subdued, it is more unequivocally beneficial than the usual modes of employing the medicine.

When the disease of the liver which is associated with dysentery, owing to its character or obstinacy, seems to require the induction of the mercurial

action, then decided measures should be employed to accomplish it; but, as we have already said, when treating of the diseases of the liver, these measures should not be continued much beyond the period within which this action is usually produced, lest the powers of life be injured thereby, irritative fever with irritability of the bowels be promoted, and the morbid action of the liver be heightened instead of being reduced by them. When abscess seems to be forming, or has already formed, in the liver, the use of mercurials, with a view of inducing their appropriate action, is generally hurtful; and this effect seldom, or at least rarely, is produced by them.

Having thus stated our views as to the operation of mercurial remedies, and the advantages which may be expected from them in this form of disease, there remains but little to remark respecting the other means of cure which may be employed in it, as they differ in nothing from what we have already expressed with a stricter reference to the simple and uncomplicated form of the disease. The use of antimonial diaphoretics seems, however, to us to be more advantageous in the hepatic than in the simple dysentery; whilst ipecacuanha in conjunction with opium is more beneficial in the latter. When the bile is irritating, crude, and apparently inspissated, large doses of the tartrate and supertartrate of potash, or of the soda tartarizata, are extremely beneficial, especially when combined with gentle doses of antimony and the spiritus ætheris nitricus. In this form of the disease, tonics and astringents are oftener prejudicial than productive of advantage; and opium, unless when combined with calomel, camphor, or diaphoretics, is not so decidedly beneficial, when given in large doses, as in the simple acute dysentery, excepting, indeed, when prescribed in the above combinations after depletions.

Thirdly. Dysentery supervening in the progress of fevers is merely a symptom of those diseases; and its treatment, when occurring under such circumstances, will be noticed when fevers are treated of. When it appears in the course of convalescence from them, it generally is induced by some error of diet and regimen, or exposure to some of the external causes which

we have already enumerated.* When it occurs after remittent and intermittent fevers, we should suspect the existence of disease of the liver and spleen, and the state and functions of these viscera should be carefully inquired into. If the functions of the liver are deranged, or this organ affected in its structure so as to give rise to the symptoms indicating such affection, the treatment recommended under such circumstances must be adopted. The speedy induction of ptyalism, after the method already recommended, if it take place, will generally be advantageous; but if the mercurial remedies fail of producing this effect, after a judicious exhibition of them, they should be laid aside. When they succeed in procuring healthy secretions and copious evacuations, even although the mouth should not be affected, we ought to be satisfied; for, endeavours to excite ptyalism by too frequent and too long an exhibition of mercury, are generally most pernicious. We have seen ulcerated gums, aggravation of all the symptoms, and loss of strength, result from persistence in the endeavours to induce ptyalism, the object being unattainable, until the patient was endangered more by the remedy than by the disease. Ptyalism, therefore, should not be made the object of a mercurial treatment in dysentery, but be viewed, when it does occur, as a satisfactory indication of the beneficial operation of this treatment, and of the removal of the disease.

The circumstance of dysentery having supervened upon fever should not prevent us from having recourse to local depletions, if the patient complains of severe tormina and tenesmus, or of pain, soreness, or a sense of heat, in the regions of the cæcum, colon, or liver. If the biliary organs be implicated in the disease, such depletions are still the more requisite, and will promote the action of mercurial medicines upon the salivary glands if this effect be desired. Even a repetition of the local depletions will be sometimes required, and be followed by a decidedly beneficial result.

The employment of purgatives, especially early in the attack, is also

* See the section on the *causes* of dysentery.

necessary; and the more so, as the disorder is generally produced in consequence of error of diet, and a too great indulgence of the appetite, which is often much increased upon convalescence from fevers. In addition to local depletions and purgatives, calomel with opium, and sudorifics or diaphoretics, should be administered; and the different means already mentioned put in practice, according as the disease may present a simple or complicated aspect: of these the warm bath, emollient and anodyne enemata, and blisters, claim a particular notice.

When dysentery occurs after continued fever, we have long considered that it proceeds from the extension of irritation or inflammatory action of the mucous surface of the stomach and small intestines, which is generally present in fevers, to the large bowels; and our practice has been founded upon this view. In cases of this description, the means of cure are precisely those already noticed. It should, however, be kept in recollection, that dysentery, when occurring after acute disease, is more apt to terminate rapidly in some one of those structural changes described in the foregoing section, more especially in ulceration; and a decided and judicious plan of cure is the more requisite under these circumstances. Local blood-letting is often indispensable in these cases, but it ought to be early employed. Purgatives, laxatives, and emollient injections, are also requisite in order to carry off the morbid secretions and accumulated matters in the *prima via*; and much advantage will be obtained from diaphoretics combined with anodynes, and from external irritants.

Fourthly. We shall now endeavour to direct the attention of the reader to the management of particular states of disease which frequently arise in the course of the forms of dysentery already described. Amongst these the most frequent is *tenesmus*. We have generally looked upon this as a local symptom, and as depending upon inflammation or irritation of the rectum; and, conformably to this view, we have always prescribed the application of leeches along the sacrum, or to the perinæum and anus, and the injection of small emollient and anodyne enemata. When *excoriations* take place about the anus, particularly if there be much pain and inflammation, the application

of a few leeches is generally beneficial, especially when followed by fomentations and poultices. In these cases, particularly if the bowels have been evacuated, and accumulated fæces and secretions carried off, the injection of a small emollient and anodyne enema, immediately previous to the employment of those latter means, is extremely serviceable. In cases of hepatic dysentery, excoriations about the anus are very frequent; and, as being not so often accompanied with the retention of fæcal accumulations as they are in simple dysentery, especially at the period of the disease when excoriations supervene, this local treatment is generally more beneficial in the complicated malady than in its simple form. After the application of leeches, lotions with opium, and astringents, are often serviceable, and ointments with opium and a little of the sulphate of zinc, or the cerussæ acetatis.

Prolapsus ani is a very troublesome symptom in dysentery, and indicates very active disease of the rectum and sigmoid flexure of the colon. Here, also, we have found the application of two or three leeches beneficial, particularly when followed by astringent fomentations. The use of a warm wash, consisting of a decoction of bark to which opium has been added, and a careful replacement of the protruded bowel, are generally requisite. When the prolapsed part of the rectum is ulcerated, astringent lotions are often beneficial; and these may be alternated with the use of the common black wash. In cases of this description, anodyne and mucilaginous enemata are necessary, at the same time that cooling aperients, combined with antispasmodics, are required to carry off the morbid secretions, which either occasion or keep up the irritation in the bowels. The employment of antispasmodics, particularly opium, hyoscyamus, and conium, in combination with laxatives, is extremely serviceable in taking off, or relieving, that state of spasm or increased action of the muscular coats of the bowel generally connected with, if not altogether occasioning, the *prolapsus*.

The inflammatory irritation and inordinate action existing in the large bowels and rectum are generally the causes of considerable pain above the pubes, *dysuria*, and frequent calls to void the urine which accompany the dysen-

teric disease, especially in its simple and acute form. In the latter stages, when inflammation has extended to the more external coats of the bowel, the bladder itself becomes affected, chiefly at its mouth and in the vicinity of the prostate gland; and if the urine be, as indeed it usually is, of a more than usually acrid and stimulating nature, the frequency of the calls to pass it, and the degree of irritation and spasm thereby occasioned, are often distressing. For these symptoms, solutions of gum arabic, injections *per anum* of mucilaginous substances, and anodynes, are indispensable. Where the urine seems to be retained, from spasm, about the neck of the bladder, we have frequently given the tinctura ferri muriatis, but have often failed in deriving advantage from it until nausea was induced.

Much benefit seems to result from the use of the carbonates of the fixed alkalies, particularly the soda, given with mucilage and opium or hyoscyamus. The practitioner should always be aware that retention of urine may supervene in the advanced stages of dysentery, and that if it be not either prevented, or speedily remedied, the dysenteric disease and general febrile action will be greatly increased by the circumstance. Local depletions, followed by the warm bath or the hip-bath, or local fomentations and emollient and anodyne injections, are all calculated to remove this symptom, whilst they tend, in no equivocal manner, to alleviate the original state of disease. Small injections, which do not distend the bowel so much as to occasion re-action of its muscular coats, are here particularly serviceable. They should not exceed two or three ounces in quantity, and ought to be frequently employed. When the symptom seems to proceed more from spasm than inflammatory action, the tinctura ferri muriatis often succeeds better than almost any thing else that we have tried; but when the strength of the patient is not very much reduced, and there is evidently inflammatory irritation existing, local depletion, especially from the perinæum, and the other means just now enumerated, ought to be put in practice.

Flatulence is another distressing symptom in this disease, often requiring particular attention. We have generally considered it to be most appropriately and successfully treated by means of any carminative or antispasmodic medicine combined with the laxatives, or purgatives prescribed. About half

an ounce of the oleum terebinthinæ, added to the laxative injections usually employed in the disease, more completely removes this symptom than any other means which can be used.

Dysenteric disease is sometimes preceded by *hæmorrhoids*, or rather, dysentery sometimes attacks individuals subject to this affection; and frequently the dysentery which seizes those persons is associated with functional or organic disease of the liver. When this complication is met with in practice, the sufferings of the patient are generally considerably aggravated, but the difficulty of treatment is not proportionally increased; for the same means which are required to remove the dysenteric disease, and any affection of the liver which may be present, are also sufficient, in the majority of instances, to cure the hæmorrhoidal affection. The loss of blood from the hæmorrhoidal vessels, the prolapsus of the tumours when at stool, and the strangulation of them when the spasm of the sphincter or lower circular fibres of the rectum is great, frequently alarms the patient, as well as augments his sufferings. In cases of this description, the application of leeches to the perinæum and around the anus, and sometimes to the hæmorrhoidal tumours themselves, fomentations, warm bath, &c. are beneficial, and should be accompanied with small anodyne injections. Local depletion over the sacrum is here also of considerable service, particularly when followed by cooling purgatives and diaphoretics. When the hæmorrhoidal affection seems to depend upon interrupted circulation in the *vena portæ*, mercurial remedies, exhibited so as to excite the action of the liver and remove obstruction, should be conjoined with the foregoing remedies. In cases of this description, we have found ten grains of blue-pill, or of the hydrargyrum cum cretâ, given at bed-time, with an equal quantity of Dover's powder, extremely beneficial, especially when about three drachms of the supertartrate of potash, with one of the sulphur precipitatum, are taken the following morning in honey or syrup.

In some cases, *abscess* forms in the vicinity of the anus, and is generally seated in the loose cellular tissue connecting the bowel to the surrounding parts. If local depletions fail of preventing the formation of matter in this situation, means should be used to bring the abscess to maturity, and an

early and large external opening should be made, in order to prevent a fistulous state of the parts from supervening. Frequent ablutions, fomentations, and injections, are here requisite, in order to remove every source of irritation which may be present.

Fifthly. Having stated our views respecting the treatment which experience has shewn us to be the most advantageous in the simple acute dysentery and in the complicated form of the disease, and remarked upon the means which have generally proved most serviceable in our hands against the more urgent symptoms accompanying it, or supervening in its progress, we now proceed to offer some observations upon those remedies which have not received any particular notice from us, in consequence of their being, in the great majority of cases, not essentially requisite in the treatment of this disease, although often necessary, especially for certain states and stages of the malady. At the same time we shall notice some medicines which have been sanctioned by the authority of other writers.

The use of the *dilute nitric acid*, both exhibited alone and in combination with opium, has received the sanction of many practitioners in India. Sir James Mac Grigor, in his admirable paper upon the diseases of the 88th regiment, while stationed at Bombay, published in the first volume of the *Edinburgh Medical Journal*, speaks of the nitric acid in favourable terms in this disease, when given to as great an extent internally as it could well be used, employing it at the same time externally. When the disorder is attended with disease of the liver and a depraved secretion of bile, this acid is often serviceable. We have generally found it most so after mercurial remedies have been used, and when the disease had assumed a chronic or sub-acute character; but we have always preferred, externally, the nitro-muriatic acid solution, employed in the manner pointed out in the First Volume,* and in the form of a tepid wash to the abdomen; whilst the nitric acid was prescribed in the usual drink of the patient.

The nitric acid, when combined with opium, is still more beneficial than

* See p. 628.

when given alone, especially when the disease is limited to the intestinal canal. When exhibited internally at the same time that the nitro-muriatic acid solution is employed externally, considerable advantages will be derived from it. Care should, however, be taken not to prescribe it internally when other remedies are exhibited with which it may form irritating and hurtful combinations in the *prima via*.

The advantages derivable from the combination of opium with an acid are not limited to the nitric acid. Combined with either the muriatic, or the citric, or the acetic acid, opium is productive of much benefit in many of the forms of dysentery; and although our own experience has not enabled us to state with precision the advantages these combinations possess, they have been recommended to us by a friend, in whose science and experience we have the greatest confidence. In order to be beneficial, they should be resorted to after evacuations have been instituted, and the large bowels unloaded of whatever fæcal matters may have been lodged in them; and, as fæcal accumulations are apt to form in the course of the disease, when the use of purgatives is neglected, care should be taken to evacuate fully the intestinal canal, from time to time, during the employment of these or similar means, especially such as are of an astringent nature.

The *decoctions or infusions of the cinchona bark*, either alone or in conjunction with the *infusion of rhubarb*, have been much employed in the dysentery of temperate climates, especially in the latter stages of the disease. As long as there is evidence of active inflammation being still present in the large bowels or in the liver, and whilst fæcal matters are still remaining in these viscera, the infusions of bark and rhubarb are seldom beneficial; but, on the contrary, are often detrimental, unless when employed in the form of an injection. When, however, exhaustion supervenes, and the disease of the colon seems to be of a sub-acute or erythematic kind, with deficient power in the mucous textures and in the capillary vessels generally, as indicated by softness of pulse, aphthous state of the mouth, excoriated condition of the anus, and tympanitic or relaxed condition of the abdomen, with clamminess of the skin, mouth, and tongue,—the administration of the infusions of cinchona and rhubarb, both by the mouth and anus, is

extremely beneficial. Whether prescribed in the form of infusion or decoction, they may be also made the vehicle for other medicines, either of a purgative or anodyne nature, according to the particular circumstances of the case.

Amongst the natives of India, these infusions, combined with the tincture of catechu and tincture of ginger, are extremely beneficial, whether given by the mouth or in the form of enema. The same remarks which we have now made respecting the bark apply equally to the infusion of calumba, which, when combined especially with the liquor ammoniæ acetatis, may be exhibited under circumstances which might render the use of cinchona a matter of doubtful propriety.

Camphor has been much recommended in the dysentery of temperate climates; and to us it appears to be a valuable adjuvant in the treatment of the dysenteries of warm countries. We have generally found it most useful in conjunction with other remedies, given in repeated doses, and in combination with anodynes and laxatives. When taken suspended in mucilage, after vascular depletions and copious alvine evacuations have been prescribed, it is a truly excellent medicine. But its use need not be limited to any stage of the disease, for it generally possesses the advantage of determining to the skin, and of diminishing vascular action, when given in moderate doses, and it diminishes spasm without retarding the operation of purgative or laxative medicines. The dose of this substance should not exceed two or three grains early in the disease; and it may be increased to five or six in the advanced stages. It is very advantageous combined with mucilaginous enemata; and when assiduously rubbed, in conjunction with the mercurial ointment, upon the abdomen and hepatic region, in the complicated and chronic forms of the disease, it is generally productive of benefit, beyond what is usually derived from the inunction of the mercurial ointment alone.

Mucilages have been much recommended in the various forms of this disease. As adjuvants merely, or as vehicles for other remedies, they are extremely beneficial. The mucilages, especially gum arabic and tragacanth,

may be also given in the patient's drink with considerable benefit, particularly when he complains of *ardor urinæ* or *dysuria*. But they are soon disrelished if not combined with some other substance which can impart a more agreeable taste to the beverage than mucilages. For this purpose, lime-juice, the nitric acid, cream of tartar, &c. may be employed. Beyond producing a soothing effect upon the urinary organs, the mucilages have little effect upon the large bowels when given by the mouth. If irritation, however, exist in the small intestines, a free use of them is attended with advantage; but they are generally digested before they reach the colon, and they often seem to dispose to acidity in the stomach and bowels. This latter effect, however, may be counteracted by exhibiting the sub-carbonates of the alkalies or magnesia in conjunction with them.

It is chiefly in the form of injections that we have found the most beneficial results proceed from the use of mucilaginous substances. When administered in this manner, they come in immediate contact with the seat of disease, soothe the irritable surface of the large bowels, sheathe it from the effects of the morbid secretions passing along it, and, when they are the vehicle of other remedies, they are the means of prolonging their influence upon the diseased organ. Employed in this way, in conjunction with camphor and anodynes, they are extremely beneficial, especially in the progress and advanced stages of the disease.

Ipecacuanha, besides being given in the form of Dover's powder, is frequently exhibited in the form of infusion, as an enema, with considerable advantage. We have derived much benefit from it, after vascular depletions and alvine evacuations have been instituted. It is also beneficially combined with calomel, or the other mercurial preparations, and with opium, in doses of from one to three grains, taken twice or thrice daily. Some practitioners in India have recommended this medicine in as large doses as from thirty to sixty grains, with as many drops of laudanum. When this practice is adopted in the commencement of the slighter cases, it frequently is followed by benefit, producing at first vomiting, and afterwards free alvine evacuations. In the more severe cases, but little advantage is derived from it beyond its

action as an ipecacuanha emetic. The stomach, in such cases, seldom can bear more than a single grain for a dose, and then the form of Dover's powder, or its combination with opium and the mercurial preparations, is most beneficial. A large injection of the infusion is often followed by sickness and retching; and when these effects are attended with a free evacuation of the bowels at the same time, as they frequently are, much advantage is derived from the practice. This injection may be also advantageously made the vehicle for anodyne medicines, as laudanum, and the extracts of hyoscyamus and conium.

The injection of *lime-water with calomel*, in the form of the black wash, is often very beneficial in the last stages of the disease, when evidences of ulceration or of sloughing of the mucous coat of the rectum or colon are present, or when, with appearances of excoriation of the bowel, there is much depression of the powers of life. In these cases, a considerable portion of mucilage should be added to the lime-water, as tending very materially to prolong the effects of the enema. Under similar circumstances, also, the employment of the infusions of calumba, catechu, rhubarb, and cinchona bark, are requisite, both exhibited by the mouth and as injections.

The *nitro-muriatic* solution should be resorted to in this disease, especially in the hepatic complication of it, as recommended when treating of the diseases of the liver. A cloth wet with the solution, spread over the abdomen, and covered by warm poultices, the whole being frequently renewed, and the patient kept as much as possible in the horizontal posture, is a very advantageous manner of resorting to this remedy; or the poultice may be made of the acid solution. It is, however, in the chronic form of the disease that the nitro-muriatic solution is most beneficial.

In respect of the *diet* and *regimen* of the patient, it may be remarked, that farinaceous food of a light description, such as sago, arrow-root, tapioca, rice, and soaked biscuits, are the most beneficial. In the advanced stages, a little wine may be added to these, especially in the cases of those who have been in the habit of using spirituous and intoxicating liquors. Broths, espe-

cially when rich and containing much animal matter, are extremely productive, in the advanced stage of the disease (the only period at which they are much required), of acidity in the *prima via*, and increase the frequency of the calls to stool.

The patient should always have a flannel shirt next his skin, or a flannel bandage or large shawl wrapped around the abdomen and loins; and he ought to be kept as much as possible in the horizontal posture, and be protected from currents of air, particularly during the night.

CASE CLXXXVII.—*Simple Dysentery in its first Stage, quickly arrested by decided Treatment.*

WILLIAM STEVENS, 6th Company, ætat. 19, admitted 6th August, 1816. Complains of pain in his bowels, and sickness at stomach; tongue foul; skin hot; pulse full and slow; stools frequent, morbid, and feculent, with mucus and tenesmus.—R. Ol. ricini, ℥ij. Enema purg. Apply sixteen leeches to his belly. Twenty ounces of blood were taken away by the leeches; the pain is not better; pulse frequent and hard; tongue furred, but moist; complains generally of pain over the belly, but particularly in the seat of the cæcum and colon, on the least pressure; stools green.—Apply sixteen more leeches to the cæcum and colon. Calom. gr. xx. h. s. Mist. salin. febrif. Enema purg.

Nine o'Clock.—Much relieved after the leeches, which brought away nearly twenty ounces of blood.

7th.—Much easier this morning; can bear pressure on the cæcum and colon without pain; pulse soft and full, 84; was purged twice in the night; tongue white, but moist.—Ol. ricini, ℥ij. Enema purg. Calom. gr. xx. h. s.

8th.—Passed an immense quantity of green bilious stools in the night, of various colours, but had a greater resemblance to spinnage and the white of eggs than any thing we can compare them to.—Repet. oleum et enema purg.

Evening.—Stools highly bilious; no kind of uneasiness at stomach, but feels the remains of pain, or a soreness in his belly; no pain at all on pressure; pulse quick; skin moist; tongue clean.—Calom. gr. xx. h. s. Mist. salin. febrif.

9th.—Stools perfectly natural; no sickness; no soreness or pain; pulse good.—Ol. ricini, ℥ij. —*Evening.* Recovering.—Haust. amar. cum sennâ, ℥ij.

10th.—Quite well.—Haust. amar. cum sennâ, ℥ij.

Evening.—Discharged.

Remarks.—This case should be considered as one of inflammation of the cæcum and colon, rather than as dysentery; although, if it had been neglected, even for a short time, it would have most probably assumed all the dysenteric characters in a very severe manner. We have already stated, that simple dysentery often commences with marked signs of disease of the cæcum; and when this is detected at the commencement of the dysenteric symptoms, decided means of cure generally remove all appearances of disease in a short time. This case, taken from amongst many similar to it, fully shews the justice of this statement.

CASE CLXXXVIII. — *Simple Dysentery, at its Commencement, from Accumulations of Morbid Secretions, &c. in the Bowels.*

JOHN EDWARDS, ætat. 24, admitted 28th October, 1816. Complains of pain in his bowels; tongue white; very thirsty. — Ol. ricini, ℥ij. stat.

Evening. — Feels better; stools crude and offensive. — Calomel. gr. xij.

29th. — Tongue white and excited; feels better; stools natural. — Ol. ricini, ℥jss. Enema purgans. Mist. salin. febrif.

Evening. — Stools crude and feculent; tongue white, not foul; some pain in his belly. — Apply fourteen leeches to his belly. Calomel. gr. xij.

30th. — Stools better; tongue white. — Ol. ricini, ℥ij.

Evening. — Stools very offensive; tongue more foul than usual; says he has no pain; but on examination we find he complains of pain at the epigastrium on pressure; pulse quick and full. — Apply fourteen leeches over the arch of the colon. Calomel. gr. xx. h. s.

31st. — Considerable fulness in his belly, about the umbilicus, and particularly above the pubes; does not pass his water easily; tongue foul; pulse small and frequent; skin greasy. — Ol. ricini, ℥ij. Foment his belly. Enema purgans stat. et repet. pro re natâ.

Evening. — Has passed a great deal of green matter, with blood; pulse quick; tongue foul. — Calomel. gr. xx. h. s.

November 1st. — Feels better. — Mist. purgans. Mist. salin. febrif. Apply sixteen leeches to his belly.

Evening. — Feels better; tongue dry and furred; medicine operated well. — R Calomel. gr. x.; pulv. antim. gr. iij.; syrup. q. s. Ft. pilul. stat. Cont. mist. salin.

2d. — Pulse hard and frequent; tongue white and excited; has no pain; stools

copious, but very offensive. — Ol. ricini, ℥ij. Mist. salin. febrif. Enema purgans. Apply fourteen leeches to his belly.

Evening. — Much better; tongue cleaner; stools bilious. — Cont. pilul. et mist. salin.

3d. — Much better; no pain at all; stools natural. — Ol. ricini, ℥ij. Cont. mist. salin.

Evening. — Much better. — Mist. salin. febrif.

4th. — Ol. ricini, ℥ij. — *Evening.* Mist. salin. — 5th. Quite well.

6th. — Discharged.

Remarks. — This case may be considered as one of inflammation of the large bowel, in which several of the dysenteric symptoms were not present, owing probably to its having come under treatment before the disease had proceeded so far as to give rise to them. A great many of the worst cases of dysentery present the symptoms complained of in this and the preceding case (that of William Stevens), for several days before they come under the care of the practitioner; and if the symptoms are not so severe as to oblige the patient to come into hospital, relief is often sought after in the intoxicating liquors of the country, which tend to aggravate them; or if the patient defers placing himself under medical care, all the signs of acute dysentery become developed, and the danger is increased from neglect.

CASE CLXXXIX.—*Simple Dysentery treated at its Commencement.*

JOHN MORRISON, ætat. 18, admitted 16th June, 1816, in the evening. Complains of griping pain in his belly, and frequent stools; some tenesmus; skin pretty cool. — Calomel. gr. xx.

17th. — Stools natural; pain in his belly severe, particularly on pressure. — Apply sixteen leeches on the belly. Pulv. purgans.

Vespere. — Stools green; pain relieved by the leeches, but he has been griped. — Calomel. gr. x. Foment his belly.

18th. — Stools feculent and formed; he passed them with difficulty; pain in his belly removed. — Ol. ricini, ℥ij.

Vespere. — Still strains; stools bilious. — Enema purgans.

19th. — Has not had a free passage in his bowels; what comes from him is perfectly natural; tongue rather furred. — Ol. ricini, ℥ij. Enema purgans every three hours till his bowels are relieved.

Vespere.—Has been fully purged, and feels much better in consequence; has passed some blood and mucus.—Enema ipecac. Calomel. gr. x.

20th.—Feels great relief from the enema; has had a perfectly natural stool this morning.—Ol. ricini. Repet. enema ipecac.

Vespere.—The oil was repeated without effect, and an injection was given, which operated, and afterwards the ipecacuanha injection was thrown up; he feels better since he has been purged; tongue clean.—Calomel. gr. xij.

21st.—Feels better; stools more natural, but still feels pain in the lower part of the belly.—Pulv. purgan. Repet. enema ipecac.

Vespere.—Feels better, but still has pain at the bottom of his belly; stools watery.—Apply eight leeches above the pubes. Haust. amar. cum sennâ, ℥jss.

22d.—Feels his belly much better since the application of the leeches last night, but passed a very restless night, and was purged frequently; stools small, with pieces of white opaque mucus; tongue clean; the tenesmus is much diminished.—Pulv. purgans, in aquâ menth. pip.

23d.—Passed an indifferent night, and was strained; he feels very much better this morning; tongue clean.—Pulv. purgans, in aquâ menth. pip. ℥ij.

24th.—He was attacked in the night with griping and tenesmus; twenty grains of calomel were given, and he passed a very good night afterwards; has not been purged.—Repet. pulv. purgans, ut antea.

Vespere.—Stools pale, clay colour, but feculent; has thirst, but no pain.—Calomel. gr. xij.

25th.—Was not purged during the night, and slept unusually well; when he does not take calomel at night he feels a constant inclination to go to stool, and straining; is thirsty; tongue furred, but moist; no pain in his belly at all; pulse good; skin cool.—Pulv. purgans.

Vespere.—Feels much better this evening.—Calomel. gr. xij.

26th.—Tongue white and rather foul; had no stool in the night, and felt rather uneasy in consequence.—Aqua Cheltenham.

Vespere.—Stools dark coloured and feculent; no pain; tongue white and moist; pulse good.—Infus. amar. cum sennâ, ℥ij.

27th.—Passed an excellent night; no pain; no tenesmus; feels much better; tongue clean; pulse good.—Repet. haust. amar. cum sennâ, ℥ij.

Vespere.—Fully purged; stools white, like chalk.—Haust. amar. cum sennâ.

28th.—Stools natural; has an unpleasant taste in his mouth.—Haust. emetic. stat.

Vespere. — Bitter taste gone; feels better. — No med.

29th. — Feels quite well. — *Haust. amar. cum sennâ.*

Vespere. — *Haust. amar. cum sennâ, ʒij.* — 30th. Discharged.

Remarks. — This case was the result of irritation proceeding from the lodgment of fecal matters in the cæcum and colon. The good effects of early leeching and purging were here evident. The white chalk-like matter passed from the bowels on the evening of the 27th, was evidently the result of disordered secretion of the mucous follicles of the large bowels. — The influence of a full dose of calomel, taken at bedtime, in diminishing the frequency of the calls to stool, was very apparent in this case.

CASE CXC. — *Simple Dysentery from Fæcal Accumulations in the Colon, treated by Leeches and Purgatives.*

GEORGE HOW, ætat. 20, admitted 11th August, 1816, in the evening. Complains of a sharp pain in his belly, and sickness at stomach; tongue white and dry; great straining when at stool, and passes nothing but blood and slime; pulse frequent and small; very thirsty; pain of the abdomen on pressure. — Apply eighteen leeches. *Calom. gr. xx. Enema purg.*

12th. — Passed a very restless night; felt easier after the leeches were applied; not purged; tongue dry and rather white; skin hot; pulse quick; great thirst. — *Ol. ricini, ʒij. Enema purg. Mist. salin. febrif. ℥j.;* a glassful every hour. Vomited the oil. *Pulv. purg.*

Evening. — Stools copious, tenacious, and mixed with feculent matter; much straining; makes water with difficulty; pain in his belly easier, but he has still soreness; tongue dry and white; skin rather warm. — *Calom. gr. xx. Mist. salin. febrif.* Apply twelve leeches above the pubes, and foment the abdomen.

13th. — Soreness of the belly and pain above the pubes diminished; makes water with more ease; still strains, but not so much; tongue clean and moister; pulse quick and rather sharp; stools tenacious, with feculent matter. — *Pulv. purg. Cont. mist. salin. Enema commun.*

Evening. — A good deal of sickness at stomach; pulse small and sharp; skin moist; has strained a good deal, but is now easier; still very thirsty; no pain at all on pressing the abdomen; what he vomited is very bitter and offensive. — *Pulv. ipecac. ʒj. stat. About ten o'clock, P.M., pilul. calom. gr. xij.*

14th. — Stools feculent, with some blood and mucus; no pain at all on pressing his abdomen; tongue rather foul; pulse frequent and rather small, 105; sickness at

stomach removed since the emetic. — Mist. purg. \bar{z} ij. Enema ipecac. three times to-day. Mist. salin. febrif.

Evening. — Stools more feculent, and he feels easier; tongue and pulse the same. — Calom. gr. xx. Enema emolliens. Cont. mist. ut antea.

15th. — Much better this morning; stools very copious and feculent; no blood, and very little straining; passes water freely; skin still warm, but not so much as before; tongue foul, white, and dry; no pain; tamarind water to drink. — Repet. enema ipecac. Mist. purg. \bar{z} ij. Mist. salin.

Evening. — Passes white slime; has some straining; tongue white and rather dry; no pain at all; skin hot, and pulse quick. — Repet. calom. gr. xx. Cont. mist. salin. Enema ipecac.

16th. — Was attacked last night, about seven o'clock, with sharp pain across the epigastrium, which still continues; pulse frequent; skin rather dry; no straining, and was well purged; tongue still white and clammy, but he looks much better. — Mist. purg. \bar{z} ij. Apply fourteen leeches across the epigastrium. Cont. enema ipecac.

Evening. — The leeches have relieved the pain in the epigastrium, but he feels a general soreness over the whole abdomen; has not been purged much; no straining; tongue dry, and of a dark colour in the centre; pulse frequent and small; appetite better; troubled much with flatus. — Haust. amar. cum sennâ, \bar{z} ij. Mist. salin. febrif.

17th. — Feels much better; was not purged in the night; makes water with more ease; soreness over his belly diminished; tongue not so brown, but still dry and furred. — Cont. haust. amar. cum sennâ. Cont. mist. salin.

Evening. — Feels no pain this evening; he has not so much soreness as he had this morning; tongue cleaner; pulse the same; has had copious evacuations. — Cont. haust. amar. cum sennâ, \bar{z} ij. Cont. enema, et salin. mist.

18th. — Tongue continues foul; no pain or straining. — Cont. mist. amar. cum sennâ.

Evening. — No pain; tongue cleaner; stools dark, and not offensive. — Haust. amar. cum sennâ. Enema, ut antea.

19th. — Much better; the soreness of the abdomen has left him; tongue still furred, and rather dry; pulse tolerably good; appetite improved; thirst urgent; stools of a paler colour, and more feculent. — Repet. haust. amar. cum sennâ, \bar{z} ij. Cont. mist. salin.

Evening. — Much the same. — Haust. amar. cum sennâ, \bar{z} ij. Enema; et cont. mist. salin.

20th. — Tongue much cleaner; pulse good; no pain, but weaker. — Cont. mist. salin. Repet. haust. amar. cum sennâ, ℥ij.

22d. — Tongue much cleaner; feels some soreness in his belly. — Pulv. purg.

Evening. — Feels much better after the purging powder. — Haust. amar. cum sennâ, ℥ij.

23d. — Much better; tongue cleaner; bowels regular; no pain or straining. — Cont. haust. amar. cum sennâ, ℥ij.

Evening. — Much better; passed white slime and natural stools. — Repet. haust. ut antea.

24th. — Cont. ut antea.

25th. — Recovering rapidly. — Haust. amar. cum sennâ.

29th. — Feels well. — Discharged.

Remarks. — This case was evidently owing to accumulations in the bowels. The pain complained of in the epigastrium arose from the affection of the transverse arch of the colon. The whitish-coloured slime seemed to proceed from irritation of the mucous follicles of the large bowel. The leeching and purging were here the chief means of cure.

CASE CXCI. — *Acute Dysentery, treated by Leeches, Purgatives, and Mercury to Salivation.*

ROBERT MANYPENNY, ætat. 23, admitted 9th January, 1817, in the evening. Complains of straining; no pain or griping in his bowels, and not purged; tongue white. — Calom. gr. xij. stat.

10th. — Stools feculent, mixed with blood; no pain, but he has some straining. — Mist. purg. ℥jv. cum magnes. vit. ℥ss.

Evening. — Stools crude and offensive; tongue clean; has some pain in his left side. — Repet. pilul. calom. gr. xij.

11th. — Straining diminished; stools more natural, and less blood. — Pulv. purg. et mist. salin.

Evening. — Tongue cleaner; less straining. — Pilul. hydrarg. cum calom. et pulv. antim. no. 1. three times a day. Haust. amar. cum sennâ, ℥ij. nocte maneque.

12th. — Much better; has still some straining. — Ol. ricini, ℥j. Cont. med. ut antea.

Evening. — Has had some pain in his belly in the course of the morning; stools crude, mucous, and feculent, with scybalæ. — Calom. gr. xij.

13th. — Has passed some natural fæces, with a little pure pus, perfectly distinct, and without any blood; he has no pain except when he is at stool; tongue white and excited; has no pain in his right side at all, but feels an obtuse pain at the umbilicus and on the left side, from the commencement of the descending colon to the rectum, and particularly in the situation of the sigmoid flexure. — Enema emolliens stat. Mist. purg. ℥jv. Rub in 3ss. unguent. mer. over the belly and the left side, night and morning.

Evening. — Feels a great deal of pain in his belly, and had some cold shivering this evening; stools feculent, and he passed a good deal of white matter; the enema gave him pain; tongue white and excited; pulse small and weak. — Apply sixteen leeches to his belly. Calom. gr. xx.; opii, gr. j.; syr. q. s. Ft. pilul. h. s. s. Mist. salin. febrif. Cont. frictio. Sago diet.

14th. — Much easier and better this morning; stools natural; less straining; has not passed any more mucus; the pain in his side is better; tongue clean; pulse 84. — Pulv. purg. Repet. mist. et frictio, ut antea.

Evening. — Stools green, with mucus; a teasing, dull pain about his belly; pulse 80; tongue white and rather furred; skin not hot; feels a sickening sensation about the umbilicus, and great heaviness, but there is no fulness at all. — Apply a blister to the umbilicus. Cont. frictio. Calom. gr. xx.; pulv. antim. gr. vj.; syr. q. s. Ft. pilul. h. s. s. Sago diet with milk. Mist. salin. febrif.

15th. — Has received a great deal of ease from the blister and pill; he had no griping at all in the night; has passed some fæces with mucus; tongue still excited, white, and rather dry; pulse small and weak; skin cool; appetite indifferent. — Pulv. purg. Cont. frictio. Omit. mist. salin. R Mist. camph. ℥bj.; vin. antim. 3ss.; spirit. æther. nitros. 3ss. M.; a large spoonful every two hours. Enema purg.

Evening. — Pulse frequent, but not strong; stools the appearance of dissolved feculent matter, but of a blue clay colour; feels faintish and weak; the pain in his belly is easier, and he has less straining. — R Calom. gr. xx.; pulv. antim. gr. jv.; syr. q. s. Ft. pilul. h. s. s. Repet. mist. camph. Cont. frictio, ut antea.

16th. — Pulse better this morning; stools of a green colour, but feculent; tongue foul and clammy; mouth tender. — Cont. frictio et mist. camph. Repet. pulv. purgans.

Evening. — Stools better, feculent, and brown; less straining and less pain; feels no pain in his liver on examination; tongue white and foul; appetite improved. — Repet. calom. gr. xx. h. s. s. Cont. frictio et mist. ut antea.

17th. — Stools more natural and quite feculent; pulse distinct and better; tongue

still furred and white; mouth slightly affected with ptyalism; no straining or pain; skin cool. — Cont. frictio et mist. camph. ut antea. Repet. pulv. purg.

Evening. — Much better; some giddiness; no pain in his bowels. — Cont. pilul. et mist. ut antea.

18th. — Mouth sore; stools perfectly natural; pain in his belly gone; no fulness or soreness on pressure; pulse good; tongue foul, but moist; all his distressing symptoms removed. — Cont. frictio, mist. camph., &c. ut antea. Bread and milk diet.

Evening. — Pain in his belly quite removed; stools natural, but small; mouth very sore; appetite better. — Garg. alum. Capiat pilul. hydrarg. twice a day. Rub in twice a day only. Cont. mist. ut antea.

12th. — Pulse natural, and only 66 in a minute; mouth sore; tongue foul; stools perfectly natural; no pain. — Rub in only once a day, and take one pill. Cont. haust. amar. cum sennâ, ℥ij. nocte maneque.

Evening. — No complaint but sore mouth. — Cont.

20th. — No stool; no pain; mouth sore. — Pulv. purg. Discontinue friction and pills. Cont. haust. amar. ut antea.

Evening. — Passed a lumbricus; stools feculent; was griped. — Cont. haust.

21st. — Tongue foul; no griping; mouth sore; no pain at all. — Repet. pilul. no. 1. every night. Haust. amar. cum sennâ, ℥ij., sal. Glaub. ʒss., to be taken night and morning.

Evening. — No pain at all, and no straining; stools scanty. — Calom. gr. xij. haust. amar.

22d. — Stools feculent, and of a brown colour; mouth very sore; no pain at all. — Mist. purg. ℥jv. Omit. pilul. et frictio.

Evening. — Stools green and curdled; some griping. — Repet. calom. gr. xij. h. s. s. Cont. haust. amar.

23d. — Feels free from pain; stools rather scanty, with mucus; tongue cleaner than it was. — Pulv. purg.

Evening. — Much better; stools natural. — Haust. amar. ℥ij.

24th. — Stools formed and natural; no pain at all. — Garg. alum. Cont. haust. amar.

Evening. — No complaint but sore mouth. — Cont. haust. ut antea.

25th. — Perfectly well; tongue quite clean. — Cont. haust. Meat diet.

29th. — Perfectly recovered. Discharged.

Remarks. — The pain complained of in the left side most probably proceeded from

inflammation of the left flexure of the colon. From the appearances of the evacuations, the pain felt in the abdomen, and the symptoms of organic change commencing in the colon, it was thought advisable to carry the mercurial treatment so far as to produce ptyalism. It will be perceived that scybalæ were passed early in the treatment of this case.

CASE CXCI. — *Simple acute Dysentery from morbid Accumulations having induced Inflammation of the internal Surface of the large Bowels, treated by repeated Leeches and Purgatives.*

WILLIAM ENNIS, ætat. 22, admitted 25th October, 1816, in the morning. Complains of pain in his belly, and passes blood in his stools; tongue white; very thirsty. — Apply eighteen leeches to his belly. Ol. ricini, ℥ij. stat. Enema purg.

Evening. — Pulse very frequent; skin hot and moist; tongue white; pain the same. — Apply a blister to his belly. Calom. gr. xx. h. s. s. Mist. salin. febrif.

26th. — Much better this morning; tongue very foul and white; pain in his belly less; pulse frequent and strong; skin hot. — Mist. purg. ℥ij. Cont. mist. salin. ut antea. Enema purg.

Evening. — Has strained a good deal, and has not been at all purged; his tongue is very foul; pulse quick; skin hot; says he has no pain. — Calom. gr. xij. h. s. Enema purg. stat. Cont. mist. salin. ut antea.

27th. — Was purged in the night after the injection; his stools are mucous, with some blood and dark-green matter; tongue white and foul; pulse frequent, 96; no pain in his belly at all. — Mist. purg. ℥jss. Enema purg. stat. Cont. mist. salin. ut antea.

Evening. — Stools feculent and mucous, of a dark-yellow colour; no pain at all; tongue cleaner; pulse good. — Calom. gr. xij. Repet. enema purg. Cont. mist. salin. ut antea.

28th. — Pulse full and strong; tongue cleaner, but still excited and white; says he has no pain in his belly; stools green, bilious matter, with tenacious mucus. — Apply fourteen leeches to his belly. Mist. purg. ℥ij. Enema purg. Repet. mist. salin. ut antea.

Evening. — Pulse full and strong; skin moist; no pain he says at all; tongue foul and loaded; appetite improved; stools foul and feculent. — Calom. gr. xij.; pulv. antim. gr. jv.; syr. q. s. Ft. pilul. h. s. s. Enema purg. Cont. mist. ut antea. Sago.

29th. — Pulse full and strong, 102; tongue much cleaner; skin moist; no griping this morning, or pain, except from the blisters. — Mist. purg. Repet. mist. salin. ut

anteà, vin. antim. \bar{z} ss. add. Stools bloody; was said to have passed a portion of the gut, but upon examination it proved to be coagulable lymph, moulded to the form of the bowel.

Evening.—Feels better this evening; tongue still foul and rather dry; pulse 90; no pain at all on pressure; stools consist of bloody, offensive, and watery feculent matter.—Calom. gr. xij. Cont. mist. ut anteà. Enema purg.

30th.—Stools feculent matter, with some blood; tongue still foul; felt a slight pain in his belly last night after making water.—Ol. ricini, \bar{z} ij. Repet. mist. salin. ut anteà. Enema purg. Continue the sago diet.

Evening.—Tongue cleaner; stools still bilious, but no blood or pain of any kind; pulse rather sharp and hard.—Repet. calom. gr. xij. Cont. mist. salin. Enema purg.

31st.—Has a slight pain in the umbilicus, but feels generally better; tongue foul and excited; pulse 90.—Cont. mist. salin. ut anteà. Mist. purg. \bar{z} ij. Apply fourteen leeches to his belly where the pain is. Enema purg.

Evening.—Feels palpitation about his heart, increased by the motion of the dooley*; pulse not much accelerated.—Apply a blister to his stomach. Mist. salin. febrifuge.

November 1st.—He is better.—Mist. salin. Mist. purg. Enema purg.

Evening.—Tongue much cleaner since morning; no pain at all; purged well; no straining; mouth not sore.—Calom. gr. xij. Cont. mist. salin.

2d.—Was strained a good deal in the night, and had frequent calls to stool; his tongue is cleaner, but still foul and white; pulse full and strong, 98; has pain in the lower part of his belly.—Apply twelve leeches. Mist. purg. \bar{z} ij. Enema purg. bis in die. Cont. mist. salin. febrif. ut anteà.

Evening.—Has found great relief from the leeches; his tongue is cleaner; pulse better, 96; stools more natural.—Calom. gr. xij.; pulv. antim. gr. jv.; syr. q. s. Ft. pilul. h. s. s. Cont. mist. salin. febrif.

3d.—No pain at all; tongue cleaner; pulse 86, natural, and good; had some natural stools in the night.—Ol. ricini, \bar{z} ij. Cont. mist. salin. Enema emolliens.

Evening.—Much better in every respect; tongue cleaner.—Mist. salin. ut anteà.

4th.—Improving stools.—Cont. mist. ut anteà. Pilul. calom. gr. xij.

5th.—Stools feculent, of a dark colour, and perfectly formed, but has passed some pure pus, without blood; has no pain at all; tongue quite clean; pulse good.—Ol. ricini, \bar{z} ij. Cont. mist. ut anteà.

* The *dooley* is a kind of litter, used in India to carry sick men on a march.

Evening. — Mist. salin. ut antea.

6th. — Much better; tongue cleaner. — Cont. mist. ut antea. Enema emolliens.

Evening. — Tongue quite clean and healthy; belly regular. — Cont. mist. ut antea.

7th. — Recovering rapidly. — Cont. mist. ut antea.

8th. — Ol. ricini, ℥ij. Sago diet. *Evening.* — No medicine.

9th. — Feels generally better; stools natural, but his tongue is foul. — Haust. amar. cum sennâ, ℥j. Cont. mist. salin. *Evening.* — Tongue cleaner. — Cont.

10th. — Cont. mist. salin. ut antea. *Evening.* — Quite well.

14th. — Discharged.

Remarks. — The coagulable lymph thrown out upon the mucous surface of the bowel in this case very nearly resembled the gut itself, being quite hollow. The purulent matter, subsequently discharged, evidently proceeded from the inflamed surface of the bowel from which the false membrane had been detached. This case was apparently the result of fæcal accumulations in the *prima via*; and this consideration, together with the character of the stools, and the relief furnished by purgatives, led to the continued exhibition of them.

CASE CXCI. — *Acute Dysentery in the form of Colitis, &c.*

JAMES CLARKE, aged 27, admitted 30th December, 1816, with pain in his belly and in the course of the colon, tenesmus, and febrile excitement. — Twenty-eight leeches were applied to his abdomen, followed by poultices and a blister. Purgatives were also given. He is no better. He took last night, calom. gr. xx.; pulv. antim. gr. jv.; syrup. q. s. Ft. pilul. Mist. salin. febrif.

January 1st, 1817. — Pulse 82, full; tongue cleaner; stools crude and morbid. — R Mist. purg. ℥ij.; magnes. vitriol. ℥ss. M. ft. haust. statim. Repet. mist. salin. ut antea.

Evening. — Has a sharp pain in the left iliac region; stools still morbid and green; tongue cleaner, moist; pulse small, 96. — Apply twelve leeches to the left iliac region. Repet. pilul. calom. gr. xx., et cont. mist. salin. ut antea.

2d. — Pulse 80, full and strong; the pain in his left iliac region is removed by the leeches; stools copious and watery; no pain any where; tongue rather white and furred. — Repet. mist. purg., et mist. salin. ut antea.

Evening. — Much better; no pain; stools watery; tongue foul. — Pilul. hydrarg. cum calom. et pulv. antim. no. 1. three times a day. Haust. amar. cum sennâ, ℥ij. nocte maneque.

3d. — Tongue still foul, but he has no pain at all; stools watery, with feculent matter. — Repet. pilul. ut antea. Mist. purg. ℥ij.

Evening. — Stools pale-coloured and offensive; no pain; tongue still foul. — Repet. pilul. ut antea. Repet. haust. amar. ut antea.

4th. — Stools fluid, with pale-brown fæces floating on the surface; tongue still foul, and a bitter taste in his mouth; occasional sickness and nausea; pulse 76. — Pulv. ipecac. ʒj.; antim. tart. gr. j.; aquæ puræ, ℥ij. M. ft. mist. emet.

Evening. — Has been well vomited, and has thrown up much bile; tongue cleaner; no pain at all. — Repet. pilul. ut antea. Repet. mist. amar. ut antea.

5th. — Stools quite natural; tongue still foul. — Repet. pilul. et haust. amar. ut antea.

Evening. — Much better. — Cont. ut antea.

6th. — Tongue rather dry and white; pulse natural; no pain. — Cont. med. ut antea. Saline mixture. Meat for dinner. — *Evening.* No change.

7th. — Has no pain or uneasiness at all, but his tongue is dry and rather excited; pulse weak, and he feels general weakness; his appetite is tolerably good; alvine discharge regular in every respect. — Repet. pilul. hydrarg. cum calom. et pulv. antim. ut antea. Repet. haust. amar. ut antea, cum tinct. ferri muriat. ℥x. in each dose. R Acid. nitros. ℥ij.; aquæ puræ, ℔ij. M.; a wine-glassful every two or three hours.

Evening. — Cont. ut antea.

8th. — Better. — Cont. ut antea. — *Evening.* Cont. med. ut antea.

9th. — Cont. ut antea. — 10th. Discharged.

Remarks. — This case may be more correctly called one of colonitis, or acute inflammation of the colon, as it was not accompanied with any discharges of blood. There were, however, tenesmus, and mucous stools, which were also feculent and offensive. The inflammation of the colon was probably induced by the irritation of morbid matters accumulated in it. Local bleeding and purgatives were here obviously indicated.

CASE CXCIV. — *Simple acute Dysentery from fæcal Accumulations, treated by repeated Leeching and Purgatives.*

JAMES BROWNE, aged 19, admitted 13th November, 1816; complains of pain in the abdomen, and tenesmus; stools mucous and bloody; tongue foul; pulse 120. — Abdomini adhibeantur hirudines xx. Habeat ol. ricini, ℥ij. Injiciatur enema purg. Calom. gr. xx. h. s.

14th. — Feels easier this morning; tongue yellow; pulse 90. — Ol. ricini, ℥iij.

Vespere. — Stools bilious; pulse 123; tongue foul; good deal of soreness in the abdomen; nausea, and has vomited to-day. — Apply sixteen leeches to the abdomen. Haust. emet. statim.

15th. — Pulse 102, full, and rather strong; tongue foul; stools yellow, with some blood distinct from the evacuation. — Fourteen leeches to his abdomen. Ol. ricini, ℥iij. Enema purg.

Vespere. — Tongue still foul; stools watery, with blood; no pain in his bowels; pulse 120. — Calom. gr. xx. h. s. Mist. purg. ℥jv. primo mane. Mist. salin.

16th. — Pulse 96; tongue cleaner; stools copious and feculent. — Mist. salin. Mist. purg. till it operates well.

Vespere. — Much the same; stools yellow, of a mucous appearance. — Calom. gr. xv. horâ somni.

17th. — Pulse 90 in a minute; stools more natural. — Mist. purg.

Vespere. — Stools feculent, with some blood. — Mist. salin.

19th. — Pulse 108; had some griping in the night; stools feculent, with a small quantity of blood separate from the rest of the motion. — Mistura purgans, cum magnes. sulph. ℥j.

Vespere. — Stools variegated, copious, and mucous, with some blood; tongue clean; pulse much accelerated; has not much pain, but has some straining. — Calom. gr. xij.; pulv. antim. gr. jv.; syrup. q. s. Sit pil. Cont. mist. salin. Enema purg.

20th. — Stools a tenacious viscid matter, mixed with blood and fæces; feels better; pulse frequent and small. — Mist. purg. ℥jv. Enema purg. R Pilul. hydrarg. ℥j.; calom. ℥j.; pulv. antim. ℥ss.; syrup. q. s. Ft. pilul. xx.; one three times a day.

Vespere. — Stools morbid and very offensive, of various colours, and mixed with viscid matter. — Cont. pilul. ut antea.

21st. — Stools mucous, mixed with some blood and feculent matter; pulse quick; no pain; tongue clean. — Mist. purg. ℥jv. stat. Enema purg. Cont. pilul. ut antea. Repet. mist. salin. Calom. gr. xij. h. s. s. Enema emolliens h. s.

22d. — Feels generally better this morning; stools more feculent, of a blue-clay colour, with more fæces and less glairy mucus; tongue clean; pulse still frequent; skin cool. — Mist. purg. ℥jv. Cont. mist. salin. Cont. pilul. ut antea.

Vespere. — Feels much better; pulse quick; stools still morbid, mixed with viscid mucus, but more natural appearance, not so blue as this morning. — Repet. calom. gr. xij. h. s. Cont. mist. salin.

23d.—Stools perfectly formed and natural; feels much better; skin cool; pulse 96; tongue clean.—Mist. purg. ℥jv. Cont. ut antea.

Vespere.—Stools feculent and frothy; feels better.—Calom. gr. xij. h. s. Cont. mist. ut antea.

24th.—Stools frothy and fermented, tenacious and feculent as before, and copious; feels better.—Repet. mist. purg. Cont. pilul. ut antea.

Vespere.—Stools the same as before; felt a fainting sensation this morning; no pain.—Repet. calom. gr. xij. h. s. Mist. camph. Omit. mist. salin.

25th.—Stools still frothy and fermented, very offensive, with some green, clay-like faeces; his mouth is getting sore.—Mist. purg. ℥jv. Mist. camph. ut antea.

Vespere.—Stools completely changed to a pale-straw colour, with some blood, and mixed with tenacious mucus; feels faint; pulse frequent.—R Pilul. hydrarg. ʒj.; calom. ʒj.; syrup. q. s. Ft. pilul. xx.; one three times a day. Camph. mist. ut antea. Sago and wine for supper.

26th.—Feels his belly rather hard; no stool in the night, but complains of sore mouth.—Cont. mist. ut antea. Cont. pilul. ter in die. Twelve o'clock, enema purg. Sago for dinner and supper.

Vespere.—Stools of an extraordinary nature, quite feculent, but tenacious, like clay and tallow mixed together, and in hard lumps; pulse very frequent and hurried; feels very weak, and has frequent sensations of fainting; mouth sore; no pain at all in his belly; tongue the same as morning.—Repet. sago and wine twice a day. Sago for breakfast. Omit. pilul. et mist. Pilul. cathart. no. 1. three times a day.

27th.—Pulse firm and more distinct, 96; feels much better this morning; had no stool in the night; no pain; tongue covered with yellowish slime.—Repet. enema purg. et mist. camph. Cont. pilul. cathart.

Vespere.—Stools the same as before, very scanty; no fainting to-day; pulse better; tongue cleaner.—Cont. pilul.

28th.—Had no stool in the night at all; feels better this morning; pulse fuller and stronger; tongue covered with a yellow crust.—Cont. pilul. cathart. ut antea. Give him some fowl for dinner.

Vespere.—No stool at all; pulse stronger and fuller; no fainting; feels better.—Cont. ut antea.

29th.—Feels much better; had no stool since the 27th; pulse 90; no pain at all; tongue foul.—Pulv. purg. Cont. pilul. cathart. et mist. camph. ut antea.

Vespere.—Stools very copious and morbid; feels better; no fainting.—Cont. pilul. ut antea.

30th. — Much better; no stools in the night. — Cont. pilul. ut antea.

Vespere. — Stools perfectly formed and natural; feels much better. — Cont. ut antea.

December 1st. — Mouth sore; no stool in the night. — Omit. mist. camph. R Mist. salin. febrif. ℥j.; spirit. æther. nitros. ℥ss.; vin. antim. ℥ss. M. ft. mist.; a wine-glassful every hour. Cont. pilul. purg. ut antea.

Vespere. — No stools; feels very well. — Pulv. purg.

2d. — No stool; feels very well. — Pulv. purg.

Vespere. — Tongue cleaner; pulse fuller and stronger; has been fully purged; stools more feculent and natural. — Cont. pilul. ut antea.

3d. — Much better; his pulse is stronger and fuller than it was. — Cont. pilul. ut antea.

4th. — No stool. — Mist. purg.

Vespere. — Stools copious, of a clayey consistence, and perfectly feculent. — Cont. pilul.

5th. — Feels very well this morning. — Haust. amar. cum sennâ, ℥ij. nocte maneque.

6th. — Stools perfectly natural; pulse good; no complaint but sore mouth. — Omit pills. Haust. amar. cum sennâ, ℥ij. nocte maneque.

7th. — Stools perfectly natural and healthy; has no complaint but sore mouth. — Cont. haust. amar. ut antea.

Vespere. — Stools perfectly natural and formed, with some mucus and blood. — Cont. haust. amar. cum sennâ.

8th. — Stools perfectly natural and formed; has no pain; pulse 80 in a minute. — Cont. mist. amar. cum sennâ, ℥ij. nocte maneque.

9th. — Stools perfectly natural; mouth well; has no complaint. — Cont. haust. amar. cum sennâ.

10th. — Discharged.

Remarks. — This case is an example of a very frequent form of dysentery as it occurs in Europeans who have recently arrived in India, and who have neglected the state of their bowels. The very copious leeching and purging were followed by very great debility in this case, and required a restorative and nourishing diet and regimen, in order that the purgatives, which were obviously indicated by the very morbid state of the evacuations, might be carried sufficiently far. During an active course of purgative medicines, the strength of the patient, especially in dysentery, requires support, as evinced in the present case.

CASE CXCV. — *Simple acute Dysentery, from fæcal Accumulations. — Treatment, Leeches and Purgatives.*

JOHN COLLINS, ætat. 17, admitted 11th November, 1816: complains of pain in his belly and sickness at stomach; slight headach; bitter taste in his mouth; pulse quick and full; tenesmus. — Apply twenty leeches to his belly. Ol. ricini, ℥ij. stat.

Evening. — Pulse 87; skin cool and moist; headach better. — Calom. gr. xx. h. s. Ol. ricini, ℥ij. primo mane.

12th. — Not so well this morning; pulse 108; very weak; tongue foul; stools mucous, with streaks of blood; pain in his bowels not at all relieved. — Apply sixteen leeches to his belly. Calom. gr. xv. stat. Enema purg.

Evening. — Pulse 108; tongue foul; stools highly bilious. — Calom. gr. xx. h. s. Ol. ricini, ℥iij. primo mane. Mist. salin.

13th. — Pulse 96; tongue foul; pain in the abdomen much diminished; stools bilious, with some blood. — Apply sixteen leeches to his abdomen. Calom. gr. xv. Ol. ricini, ℥ij. Enema purg.

Evening. — Pulse 96; tongue foul; pain in his abdomen diminished; stools bloody, with a yellow froth; the leeches were not applied this morning. — Apply sixteen leeches to his abdomen. Calom. gr. xx. h. s. Ol. ricini, ℥iij. primo mane. Sago and milk for breakfast and supper.

14th. — Rather better; pulse 93; stools copious and yellow, with some blood separate from the rest of the motion. — Calom. gr. x. stat. et h. s.

15th. — Pulse 84; stools yellow and copious; says he has pain to-day in the abdomen. — A blister to the belly. Ol. ricini, ℥iij. stat. Enema purg. Calom. gr. xij. h. s. Mist. salin.

16th. — Stools of a mucous appearance, with blood; pulse 84; tongue very foul. — Mist. purg. till it operates.

Evening. — Pulse 96; tongue cleaner; stools more natural. — Calom. gr. xij. h. s. Mist. salin.

17th. — Better. — Ol. ricini, ℥iij. stat. Calom. gr. xv. h. s. Enema ipecac.

18th. — Pulse 78; stools feculent, and of a brown colour; tongue still foul. — Ol. ricini, ℥iij. Mist. salin. secundis horis.

Evening. — Better; some griping. — R Pilul. hydrarg. ʒss.; calom. ʒj.; pulv. antim. gr. xv.; syrup. q. s. Ft. pilul. jx.; one three times a day. Ol. ricini, ℥iij. primo mane.

19th. — No pain in his belly; feels very weak; tongue clean. — Cont. pilul. ut antea. Calom. gr. xij. h. s. s.

20th. — Stools crude, morbid, of a pale colour, and scybalous; feels very weak; tongue foul at the root. — Mist. purg. \mathfrak{z} ij. Cont. pilul. ut antea.

Evening. — Skin cool and moist; tongue cleaner; stools still morbid, but better than the last. — Repet. pilul. ut antea.

21st. — Stools much better; feels much easier; tongue still furred. — Cont. mist. salin. Mist. purg. Enema purg. Cont. pilul. ut antea.

Evening. — Complains of pain in his bowels since morning; they are tense and full, with pain on pressure. — Apply a blister. Calom. gr. xx. h. s. s. Repet. mist. salin. ut antea.

22d. — Pulse 74, small and weak; feels much relieved by the blister; tongue moist and white, with mucus; was not at all purged in the night; seems very weak; appetite indifferent. — Give him two glasses of wine in the day. Mist. purg. \mathfrak{z} iv. Sago for breakfast, chicken for dinner and a glass of wine, sago and wine for supper.

Evening. — Pulse 76, fuller and stronger than it was in the morning; tongue cleaner; has no appetite, and complains of some griping when he goes to stool. — Calom. gr. xx. h. s. s. Cont. mist. ut antea.

23d. — Feels very weak, and his pulse is languid and low; stools perfectly natural and formed; tongue cleaner than it was. — Repet. pilul. cum pulv. antim. ut antea, *i. e.* three times a day. Mist. camph. Continue diet.

Evening. — Feels better this evening, but very weak; his tongue is cleaner. — Cont. med. ut antea.

24th. — Is better this morning; pulse still languid; stools natural colour, but of a morbid appearance, and has griping; mouth rather sore. — Cont. mist. salin. ut antea. Enema purg. R Pilul. colocynth. cum aloë, \mathfrak{z} ss.; calom. \mathfrak{z} j.; pulv. antim. gr. x.; syr. q. s. Ft. pilul. x.; one three times a day.

Evening. — Complains of more uneasiness since morning, but no other alteration. — Cont. pilul. et mist. camph. Enema purg. Omit. mist. salin.

25th. — Feels much better; his pulse is 80; skin cool; tongue covered with a yellowish slime; had four or five stools in the night. — Cont. pilul., mist. camph., et enema purg.

Evening. — Is better this evening. — Cont. mist. camph. R Pilul. aloët. cum colocynth. \mathfrak{z} j.; cal. \mathfrak{z} ss.; pulv. antim. \mathfrak{z} j.; syr. q. s. Ft. pilul. xx.; one three times a day.

26th. — Feels better, but weak; pulse small, as usual; tongue covered with a yellowish slime; has not taken the purging mixture since the 22d. — Mist. purg. \mathfrak{z} ij.; to be repeated in two hours, if the first dose does not operate. — Cont. pilul. et mist. camph.

27th. — Was a good deal purged in the night; stools watery, and of a yellow

colour, feculent and tenacious matter; feels very weak; pulse small and languid. — Three glasses of wine a day. Cont. dieta præscripta. Pilul. ut antea.

28th. — Tongue cleaner; pulse languid; stools lumpy, like gravel and clay. — Cont. pilul. ut antea. Cont. mist. camph.

Evening. — Pulse stronger and better; has not been purged at all. — Cont. ut antea.

29th. — Much better; pulse still small; was purged four or five times in the night; tongue cleaner, and no pain of any kind; appetite improving. — Cont. pilul. ut antea. N.B. Stools more feculent and copious, but still morbid. — Pulv. purg.

Evening. — Tongue cleaner; was purged; stools copious and morbid, of a straw colour. — Cont. ut antea.

30th. — Is much better; tongue cleaner; pulse still weak, but stronger than usual. — Cont. pilul.

Evening. — Feels rather worse; stools like blue clay and sand. — Cont. pil. ut antea.

December 1st. — Was not purged in the night. — Pulv. purg.

Evening. — Tongue clean; pulse the same; has been purged; no pain; stools morbid. — Cont. pilul. ut antea.

2d. — Complains of pain in his belly, and frequent inclination to purge, from the pills. — Apply a blister to his belly. Pulv. purg. Stools feculent matter, mixed with mucus and marked with bile.

Evening. — Feels great benefit from the blister; has been well purged. — Cont. pilul. ut antea.

3d. — Was well purged this morning; feels much better; tongue clean; stools well marked with bile. — Pulv. purg. stat. Cont. ut antea.

4th. — Has passed a good deal of mucus in the night, but was much relieved after he was purged this morning. — Omit. pilul. Pulv. purg. stat.

Evening. — Less pain; well purged. — Pulv. Doveri, gr. xv. h. s.

5th. — Perspired freely, and feels better this morning; was not purged or griped in the night. — Pilul. hydrarg. cum calom. et pulv. antim. no. 1. nocte manequ. Haust. amar. cum sennâ, ʒij. nocte manequ.

6th. — Was not purged at all in the night; tongue foul. — Pulv. purg. stat. Cont. pilul. ut antea.

Evening. — Took two doses of the powder without effect, and had an enema, which relieved his bowels; he passed some blood; feels very uneasy this evening, and complains of pain in his head; tongue moist; great weakness; stools more feculent and natural, but broken, as if they had been confined for some time. — Calom. gr. xij.; pulv. antim. gr. jv.; syr. q. s. Ft. pilul. h. s. s. Cont. mist. ut antea. Repet. haust. amar. Rub in ʒj. unguent. mercur.

7th. — Feels weak, but is generally better. — Three glasses of wine.

Evening. — Pulse better; has been purged. — Cont. med. ut antea.

8th. — Passed a good night, and feels better. — Cont. med. et dieta.

Evening. — Has only had one stool in the day; his tongue is clean, and he has no pain. — Cont. med.

9th. — Pulse very weak, but he feels better; was purged four times in the night; stools more feculent. — Cont. pilul. et haust. amar. cum sennâ, \bar{z} ss.

10th. — Has less pain; his pulse is better; skin cool; stools copious and more feculent. — Cont. pilul. et haust. amar. cum sennâ, \bar{z} ss. nocte manequ.

Evening. — Much better in every respect. — Cont. pilul. et haust. amar. ut antea. Wine, &c. as before.

11th. — Tongue quite clean; no pain in his belly at all; stools natural. — Cont. mist. amar. ut antea. Omit the pills.

12th. — Much better. — Cont. haust. amar. cum sennâ, \bar{z} ss. nocte manequ. Diet and wine.

13th. — Has no complaint but weakness; stools improving; appetite good. — Cont. haust. amar. ut antea.

Evening. — Cont. haust. amar. cum sennâ, ut antea.

14th. — Feels quite well; stools natural. — Cont. haust. amar. \bar{z} jss. nocte manequ.

Discharged for exercise.

Remarks. — This case, in many respects, resembles the foregoing. The purging pills, composed of the compound extract of colocynth and aloës, were here productive of little advantage. The necessity of persisting in the use of purgatives until the accumulations were removed from which the disease proceeded, is well illustrated in this case, as well as the importance of supporting the patient's strength until the practice is carried the length of producing its full effects.

CASE CXCVI. — *Dysentery associated with disordered state of the Liver.*

MICHAEL DUNN, ætat. 19, admitted 22d October, 1816. Complains of pain in his bowels, and passes blood in his stools; tongue white. — Ol. ricini, \bar{z} ij.

Evening. — Stools mucous, with feculent matter. — Calom. gr. xij.

23d. — Stools crude, but feculent; was griped in the night; tongue clean. — Ol. ricini, \bar{z} ij.

Evening. — Feels soreness in his right side, and pain in his shoulder; stools consist of a viscid mucus; pulse quick. — Apply fourteen leeches to his side. Calom. gr. xx. h. s.

24th. — Stools gelatinous, of a dark colour; has some straining, and had frequent inclination in the night to relieve himself, without the power. — Ol. ricini, \bar{z} ij. stat. Calom. gr. xx. h. s.

25th. — Stools feculent and bilious; tongue clean; still complains of pain in his side and shoulder; pulse 90; says he cannot lie on his right side at all; pain is sharp when he takes a deep inspiration. — Apply fourteen leeches to his side. Ol. ricini, \bar{z} ij. stat.; calom. gr. x. h. s.

26th. — Has not so much pain in his shoulder or side; pulse better; stools feculent and formed, but more tenacious than they should be. — Ol. ricini, \bar{z} ij. R Mist. salin. febrif. \bar{b} j.; antim. tart. gr. j.; spirit. æther. nitros. \bar{z} ss. M.; a wine-glassful every hour.

Evening. — Stools green and variegated, with some mucus; has vomited a good deal; he threw up green bile; feels weak; tongue foul. — Calom. gr. xij. h. s. Cont. mist. salin. without the antim. tart.

27th. — Feels easier; stools crude, of a natural colour, and mixed with undigested vegetables. — Cont. mist. salin. ut antea. Ol. ricini, \bar{z} ij.

Evening. — Much better; pulse quick; skin hot. — Cont. mist. salin. Calom. gr. xij.; pulv. antim. gr. jv.; opii, gr. j.; syr. q. s. Ft. pilul. h. s. s.

28th. — Stools mucous, with feculent matter and blood; has still straining; pulse small, not frequent; tongue clean in the centre, and rather white at the edges; has no pain in his belly. — Ol. ricini, \bar{z} ij. Enema purg. — *Twelve o'Clock.* Enema anodyn.

Evening. — Stools very copious; feels soreness in his seat from the constant purging; pain better. — Enema anodyn. h. s. Repet. mist. salin. febrif.

29th. — Stools a white flaky mucus, with some blood and greenish feculent matter; pulse good; feels sickness at stomach, and inclination to vomit. — Mist. emet.

Evening. — Vomited much green bitter matter; stools more feculent, but of a lighter colour; no change in his tongue; headach; pulse good; sickness diminished. — Repet. mist. salin. ut antea. Calom. gr. xij.

30th. — Stools green feculent matter, with mucus; pulse weak, and not frequent; tongue the same. — Enema purg. Mist. salin. ut antea. Ol. ricini, \bar{z} ij.

Evening. — Feels weak; stools better; tongue the same. — Cont. mist. salin.

31st. — Tongue cleaner; head giddy; stools crude, with some blood; no pain; less straining. — Apply two blisters to the temples. Enema purg. Cont. mist. salin. ut antea.

November 1st. — Ol. ricini, \bar{z} ij.; mist. salin. febrif. \bar{b} j.

Evening.—No headach; no fever; has frequent sickness; pulse good; tongue clean; no pain about his belly; complains chiefly of weakness.—Cont. mist. salin.

2d.—Feels better this morning; pulse natural; skin moister than usual.—Cont. mist. salin.

Evening.—Nearly well.—Cont. ut antea.

3d.—Cont. ut antea.—4th. Cont.

5th.—Recovering rapidly.—Haust. amar. \bar{z} j.

Evening.—Cont. haust. amar. comp.—6th. Cont.

8th.—Feels well.—Discharged.

Remarks.—The dysenteric affection was here obviously complicated with accumulations of bile in the liver, and determination of blood to this organ. During his convalescence, slight pain returned in his side and shoulder, which was removed by the application of ten leeches to the right side. His recovery was complete; and nothing further was required than attention to the preservation of an open state of his bowels.

CASE CXCVII.—*Hepatic Dysentery, treated by Leeches, Purgatives, and Mercurials.*

MICHEL DRUDY, ætat. 29, admitted 6th January, 1817: complains of pain in his bowels; tongue whitish and moist; pulse full, 108; much straining.—Apply eighteen leeches to his belly. Pilul. calom. gr. xx. h. s. Mist. salin. cum antim. tart. gr. j. Enema purg.

7th.—No pain in his bowels; stools watery, feculent, yellow; tongue whitish; a little straining; pulse 96.—Mist. cathart. cum magnes. sulph. \bar{z} ss. Enema purg. Cont. mist. salin.

Vespere.—Stools very copious, feculent, yellow; has a soreness in his bowels; tongue whitish; pulse full, 96; straining.—Apply sixteen leeches to his bowels. Enema purg. Pilul. calom. gr. xx. h. s. Mist. salin.

8th.—Tongue moist and clean; has found relief from the leeches, but still complains of pain; stools copious, morbid, and feculent; pulse soft, 78.—Mist. purg. \bar{z} jv.; natron. vitriol. \bar{z} ss. M. stat. Pilul. hydrarg. cum calom. et pulv. antim. no. 1. three times a day. Cont. mist. salin. ut antea.

Vespere.—Stools morbid, bloody, feculent; no pain; tongue clean.—Cont. med. ut antea. Mist. amar. cum sennâ, \bar{z} ij. nocte maneque.

9th.—Feels better; stools natural.—Cont. pilul. et haustus amar. ut antea. Enema purg. vespere.

10th.—Much better; stools copious and crude.—Mist. purg. \bar{z} jv. Cont. pilul.

Vespere.—Stools watery, brown; much straining; pulse 96; tongue whitish.—Cont. pilul. et mist. amar. et mist. salin. Enema purg.

11th.—Tongue whitish; pulse rather full, 84; stools feculent, thick, greenish; straining rather less.—Mist. cathart. Cont. pilul. Enema purg.

Vespere.—Has felt a pulsation and an acute pain at the scrobiculus cordis; stools copious, watery, brown; straining less; tongue whitish; pulse 96.—Cont. pilul. et mist. Enema purg. Apply twelve leeches to the scrob. cordis. Cont. mist. salin.

12th.—Much griping last night; tongue white; pulse rather full, 84; stools natural.—Apply fourteen leeches to his belly. Mist. cathart. Mist. salin. Cont. pilul.

Vespere.—Much griping; feels a heavy weight and pain at the scrobiculus cordis; has a shortness of breath on lying down; tongue whitish; pulse 84; stools watery, brown, feculent; much straining.—Apply eighteen leeches to his abdomen. Enema purg. Pilul. calom. gr. xx. h. s. Mist. salin.

13th.—Feels much better; pulsation as at a former report; no pain in his bowels; tongue white; pulse 86; no griping.—Mist. cathart. Pilul. hydrarg. gr. v. Enema purg. Mist. salin. Apply a blister to the scrobiculus cordis.

14th.—Stools natural; tongue whitish; pulse natural.—Pilul. hydrarg. Haust. amar. cum sennâ.

Vespere.—Stools feculent, watery, with some blood; straining; tongue whitish; pulse 96.—Pilul. hydrarg. Enema purg. Mist. salin.

15th.—Stools more natural; tongue white and moist; has pain across the lower part of his belly, over the pubes; no fulness in his belly; pulse 78; skin cool.—Pulv. purgans. Pilul. hydrargyri cum calomel. et pulv. antim. three times a day. R Unguent. mercur. ʒj.; camph. gr. xxv.; unguent. alb. ʒjss. M.; rub the size of a nut over his belly night and morning.

Vespere.—Fully and largely purged; stools a green, viscid mucus, with feculent matter, which scald him as they pass; feels less pain in his belly; pulse full, frequent, and strong.—Cont. frictio. R Calomel. gr. xx.; pulv. antim. gr. jv.; syrup. q. s. Ft. pilul. Repet. frictio. Repet. mist. ut antea.

16th.—Stools morbid and crude, but perfectly feculent, of a pale clay colour; pain in his belly diminished; tongue white and furred; pulse more natural.—Cont. frictio. Pulv. purg. Cont. pilul. ut antea.

Vespere.—Stools still morbid, but they are copious and feculent; tongue clean; pain diminished.—Cont. calom. gr. xx. h. s. Cont. frictio.

17th.—Stools feculent; has less pain and no straining; tongue cleaner.—Pulv. purg. Cont. frictio. Cont. pilul. hydrarg. cum calom. et pulv. antim. ut antea.

18th.—Stools natural, but of a pale brown colour; has increase of pain.—Apply twelve leeches. Cont. med. ut antea.

Vespere.—Stools natural; tongue cleaner; pulse good; skin cool; the leeches have not relieved him.—Cont. pilul. ut antea, et frictio.

19th.—Tongue quite clean and healthy; stools perfectly natural; no pain at all, but there is still a pulsation in the scrob. cordis, which he says annoys him; he feels it more when he lies down than when he stands; it is not painful, but when he lays any weight upon it he feels a stinging sensation.—Cont. friction, pills, and draught, ut antea.

Vespere.—Stools quite natural; some griping.—Calom. gr. xij. h. s.

20th.—Stools copious, and quite natural; no pain, but had some straining.—Pulv. purg. Haust. amar. cum sennâ, ʒij. h. s. s.

21st.—Stools perfectly natural; tongue clean; no pain.—Repet. pulv. purg.

Vespere.—Tongue dry and furred; stools watery.—Calom. gr. xij.

22d.—Stools natural colour, and feculent; tongue rather foul; he has a bitter taste in his mouth, and great thirst.—Mist. emet.

Vespere.—Tongue cleaner since the emetic; threw up a great deal of bile.—Cont. pilul. ut antea. Repet. haust. amar. cum sennâ.

23d.—Stools natural; tongue foul; says he had some straining; no pain.—Pulv. purg. Cont. pilul. ut antea.

Vespere.—Stools very bilious and feculent; complains of pain in the scrobiculus cordis, which he does not feel when he lies on his back, but he has a sense of great weight.—Rub in unguent. mer. on the scrobiculus cordis. Repet. pilul. ut antea.

24th.—Stools quite natural; tongue foul; pulse 88 and rather hard.—Repet. frictio. Cont. pilul. ut antea.

25th.—Stools perfectly natural; no pain or griping.—Cont. pilul. et frictio, ut antea. Enema purg.

26th.—Stools very copious and crude; no soreness at all in his belly, but he is griped.—Mist. purg. ʒjv.; magnes. vit. ʒss. add. Cont. pilul. et frictio.

Vespere.—Stools of a pale green colour, and feculent; feels pain in the scrobiculus cordis, and his tongue is white and excited; pulse full, rather hard; there is nothing to be felt upon examination, but he complains of great pain on the least pressure being made under the cartilage in the scrobiculus cordis.—Pilul. aloët. cum calom. Haust. amar. cum sennâ et magnes. vit. ʒj.

27th.—Passed a good night; stools of a natural consistence, but pale brown colour; tongue cleaner than we have seen it.—Cont. omnia. Insert a seton in the scrobiculus cordis.

Vespere. — Stools perfectly natural; tongue cleaner; thinks the pain less. — Cont. ut antea.

28th. — Feels much better this morning; can breathe much easier; his stools are more natural and his tongue is cleaner. — Cont. pilul., mist., et frictio, ut antea.

29th. — Stools perfectly natural; has no pain at all in the scrobiculus cordis, except from the seton; tongue cleaner; recovering fast. — Cont. mist. et frictio ut antea. From this time the pills and mercurial friction were omitted, as they failed of affecting the system, and the use of purgatives was persisted in. He continued to recover, and was discharged quite well within a fortnight.

Remarks. — In this case the dysenteric symptoms were not severe; but the disorder of the bowels was evidently perpetuated by the disease of the liver, which was evinced by the state of the tongue, by the alvine evacuations, and the pain, weight, and pulsation, at the scrobiculus cordis.

CASE CXCVIII. — *Dysentery associated with Disease of the Liver, &c.*

CAPTAIN ———, cavalry, came under our care for dysentery on the 19th of June. He was seized on the 20th May with a soreness in the epigastric region, and sense of fulness, with dysenteric state of his bowels. He took some rhubarb, which acted partially, but relieved him. He afterwards took calomel till his mouth was sore, when his bowels immediately became regular, and he got better. In the early part of this month the dysentery returned; the stools were bloody, with mucus, tormina, and tenesmus, and very heavy pain, producing sickness in the epigastric region. He commenced a second course of mercurials, and always felt relieved when his bowels were cleared out.

19th. — Pain in the region of the stomach rather severe; stools for the last day or two green; a slight hardness about the liver, and evident fulness of the colon, with uneasiness on pressure; urine high coloured; pulse quick and small. — Appl. hirud. viij. parti dolenti. Calom. gr. jv. Ol. ricini, ʒjss. Had a stool in the afternoon, with blood and hardened fæces.

20th. — Purged; stools highly bilious; has not felt that deep-seated pain since the application of the leeches. — Repet. pilul. gr. jv. et ol. ricini, ʒij.

21st. — Evacuated a large quantity of inspissated, yellow and green bile, which gave him some pain in passing it; on the whole much better. — Pilul. hydrarg. no. l. h. s. s. R Magnes. vitriol. gr. xcjv.; solve in aquæ tepid, ʒij.; mane sumend.

22d. — Was purged three times; very easy; feels better. — Repet. mist. ut antea.

23d. — Had one large feculent evacuation, of a dark brown colour, and three copious feculent stools; in the afternoon he felt some fulness in the course of the colon, which continued till night. — Calom. gr. vj. h. s. s. Ol. ricini, ℥j. mane sumendus.

24th. — Has had very copious stools, feculent, and latterly clean water; feels quite light and easy; the bitter taste in his mouth, of which he has complained before, is diminished. — Pilul. hydrarg. no. 1. h. s. Aquæ Cheltenham. ℥vj. mane sumend.

25th. — The Cheltenham water has not operated so fully as that which he has been accustomed to take; he has had three rather scanty evacuations. — Pilul. ut olim. R Magnes. vit. gr. xcjv.; aquæ, ℥x.; mane sumend.

26th. — Had a very copious, natural evacuation, without any pain or straining, mucus, or blood; his eyes are perfectly clear, and he is improving daily; appetite good; sleep undisturbed. — Repet. pilul. hydrarg.

27th. — Had one stool this morning, without either straining or blood, and has been tolerably well the whole day till the evening, when he felt pain in the course of the colon, as before, but which went off on his taking some food. — Repet. pilul. hydrarg.

28th. — Has had two perfectly natural evacuations, and is perfectly free from pain; has taken a little claret to-day. — Repet. pilul. horâ somni, et magnes. vit. ℥jss.; aquæ puræ, ℥x. mane.

29th. — Has had three good natural purging stools; general appearance much improved. — Infus. quassiæ, ℥j. ter in die.

30th. — Bowels perfectly natural, and his health and looks are much improved; he is gone to Arcot, but continues the bitters and pills.

July 2d. — Felt quite well during his absence, but his bowels have been rather bound; in consequence of which he has felt a heavy and full sensation in the region of the colon. — Cont. pilul. Magnes. sulph. ℥jss.; aquæ puræ, ℥x. nocte capiend., and continue infus. quassiæ.

3d. — Fully purged; much relieved. — Cont. pilul. Repet. haust.

4th. — Felt some pain in his belly all day, and was purged frequently, but his evacuations are quite natural. — Cont. pilul. Repet. haust.

5th. — Was not purged so freely to-day, but he has not had any pain. — Repet. haust. Cont. pilul.

6th. — Purged very freely; evacuations quite natural; eyes and countenance clear and lively; good appetite; strength improving daily. — Repet. haust. et pilul.

9th. — Felt his evacuations this morning very hot. — Calomel. gr. vj. horâ somni. Ol. ricin. ℥jss. nocte sumend.

10th. — Was seized in the night with sickness and headach; vomited a quantity of acid matter from his stomach; has been purged frequently to-day, and has passed a quantity of thick, viscid mucus, exceedingly hot, and with some pain. — Mist. sal. absinth.

11th. — Was purged freely; stools more natural, but he complains of an uneasiness about the præcordia, which extends down to the hypochondrium; his pulse is full and strong, but soft. — R Aquæ ammon. ℥xxx.; tinct. opii. camph. ʒss.; spirit. æther. nitros. ʒj.; aquæ puræ, ʒij. M. ft. haust. Repet. mist. salin.

12th. — Passed a good night; the pain in the præcordia removed, but he feels fulness in the course of the colon; was purged freely. — Cont. infus. quassia comp. ʒjss. aquæ ammon. ʒss. add. Repet. mist. salin.

13th. — Has been perfectly well all day; the pain in the præcordia removed. — Discont. the saline mixture. Cont. infus. quassia, cum aquæ ammon. ʒss.

14th. — Two or three good stools. — R Sal. Glauberi, ʒij.; aquæ puræ, ʒx.

15th. — Purged very copiously, and feels quite well.

17th. — Went to Vellore convalescent.

Remarks. — This case evidently evinces the necessity of continuing the use of deobstruent purgatives and laxatives after the more severe symptoms of the disease have been removed, and while the patient is convalescent. Mercury, even when it succeeds in affecting the mouth and benefiting the disease, does not always completely cure it; the dysenteric symptoms often returning upon the subsidence of the specific effects of the medicine. Under those circumstances, its alterative operation, when followed by saline aperients, is often serviceable.

CASE CXCIX. — *Dysentery with extensive Hæmorrhage, and fecal Accumulations, treated by Purgatives, Bark, &c.*

COWELL HOWARD, Private, Madras European Regiment, ætat. 40, a very respectable-looking and well-conducted man, who appears to have seen better days; has been under the care of the assistant-surgeon of the regiment since the 20th of January last; as he does not appear to improve, we have taken him under our own care, Feb. 1st, 1817, in camp at Kurnool. He has taken mercurials, and had a dose of castor oil last night. Stools copious, feculent, and very offensive; his mouth is sore; he complains of pain in his limbs and general discomfort, though he cannot well describe where he feels most uneasiness; his spirits are low, and his general health is much deranged. — Haust. amar. cum sennâ, ʒij.; magnes. vitriol. ʒij. M. ft. haust. stat. capiend.

Evening. — Passed a great deal of white, viscid mucus in his stools, without fæces, and without pain. — R Pilul. aloët. cum calom. et pulv. antim. no. 1. three times a day. Repet. haust. amar. cum sennâ, sine magnes. vitriol.

2d. — Stools copious, crude, and feculent, with some appearance of blood; mouth still sore; feels no pain, griping, or straining, but the pain in his limbs, and general discomfort, continue. — Cont. med. ut antea.

Evening. — Has passed blood in his stools, but there is also a quantity of acrid-like feculent matter. — Cont. ut antea.

3d. — Stools feculent, acrid, and very offensive; he has passed large lumps of coagulated blood in the stools; has no pain at all; pulse 72, soft and full; had some straining in the night, but he passed the coagula without either pain or straining; tongue white in the centre. — Cont. pilul. et haust. amar. cum sennâ, cum vitriol. magnes. 5ij.

Evening. — Stools more natural; no blood; tongue white; no pain or straining. — Cont. ut antea.

4th. — Stools morbid, feculent, and mixed with pure blood; had some griping in the night, but no pain in his belly. — Omit. pil., et cont. haust. amar. cum sennâ, ut antea.

Evening. — No material change. — Calom. gr. xij. h. s. Cont. haust. amar.

5th. — His stools this morning are of an extraordinary appearance; some perfectly natural feculent matter, with crude, tenacious lumps of fæces, and masses of coagulated blood, which give a bloody appearance to his motions; he had no straining in the night, and seldom feels pain; his looks are not at all changed; pulse quite regular, full, and distinct, 72; mouth still tender. — Repet. haust. ut antea.

Evening. — Stools natural fæces, with the same appearance of blood. — Cal. gr. xx. h. s. s.

6th. — Had some griping in the night, but there is not near so much blood this morning, and large scybalous lumps of hardened fæces have passed; has no pain in his belly; his tongue is cleaner. — Cont. haust. ut antea.

Evening. — Very little griped, and very little blood. — Cont. haust.

7th. — Large coagula of pure venous blood, with crude, cheesy-like fæces; no pain at all; he has slight griping when he goes to stool. — Repet. haust. twice a day.

8th. — Less blood than usual; stools feculent and offensive, of tenacious consistence. — Repet. haust. stat., et repet. at twelve o'clock, and four P. M.

Evening. — Stools crude, of a dark brown or black colour, but feculent, and no blood. — Cont. med. ut antea.

9th. — Passed large coagula perfectly distinct from the stools, with perfectly natural fæces; does not look at all ill in the face, but he thinks himself weaker; pulse natural; tongue clean. — Decoct. cinchon. ℥j.; acid. vitriol. dilut. ℥xxx.; tinct. ferri muriat. ℥xx. M.; a wine-glassful every four hours.

10th. — Has passed less blood; stools more natural.

Evening. — Had no stool this day, and feels easy. — Cont.

11th. — Stools copious, feculent, and offensive; less blood, and no straining. — Cont. med.

12th. — Some blood in the stools; no pain. — Cont. med.

13th. — Still discharges blood, with hardened fæces. — Ol. ricini, ℥ij. Discontinue the bark.

14th. — Was griped last night, and passed some pure blood; stools otherwise natural. — Ol. ricini, ℥ss. Repet. cinchon. ut antea.

15th. — Still passes blood, but his stools are feculent and more natural; he does not get weaker, and his appetite is improved. — Repet. ol. ricini, ℥ss. Cont. cinchon. R Acid. nitros. ℥ij.; aquæ puræ, ℥ij. M.; a wine-glassful occasionally.

16th. — No stool at all in the night. — Cont. ut antea.

17th. — Has not passed any fæces, but he evacuated a large lump of pure coagulated blood, measuring nearly fourteen ounces; his general health is not at all affected by the intestinal hæmorrhage; he improves in strength, and walks about without any inconvenience. — Cont. med.

Evening. — Has had one natural stool. — Cont.

18th. — His stools this morning are mixed with coagula; they are not offensive as formerly. — Cont. med.

19th. — Less blood; motions natural; pulse good; no pain. — Pergat.

Evening. — Stools natural; no pain or blood. — Cont. med.

20th. — Had no stool; feels very well. — Cont.

21st. — Has discharged some pure blood and natural fæces. — Cont.

22d. — Had no stool, and feels well. — Cont. med.

Evening. — No blood; natural motion.

23d. — No stool; no blood. — Cont. — *Evening.* Stools natural; no blood.

24th. — No stools; no blood. — *Evening.* Stools natural; no blood.

25th. — Has always a motion in the course of the day; no blood; spirits improving, and he says that he is quite well.

28th. — He continues the same treatment, and is daily improving; his motions are natural, and there is no blood; his spirits and strength improve, and all his

complaints have left him. We have discharged him for air and exercise, as he is a well-conducted man. He left off all medicine, but reported himself every day; and he recovered perfectly for duty by the 15th of March, taking only a little castor oil occasionally.

Remarks. — The very extensive hæmorrhage which took place in this instance was evidently owing to the irritation of accumulated fæces in the large bowels. The great extent of these accumulations is evident from the quantity of feculent matter and scybala passed during the treatment. The extensive hæmorrhage from the mucous surface, which, altogether, could not have been much under a hundred ounces, from the size of the coagula, evidently prevented the supervention of active inflammation and general febrile excitement of the system. The use of purgatives was persisted in, in order to remove the efficient cause of disease.

CASE CC.—*Dysentery from Accumulations of morbid Matters in the large Bowels, treated by Purgatives, &c.**

—— ———, after returning from the review of Russell's Brigade, on the 26th of August, 1817, was attacked with slight griping pain about the umbilicus. On the following morning (the 27th) he took one of his usual doses of senna, manna, and sulphate of magnesia; but as it had no effect when we saw him, (about 9 o'clock, A.M.) and as the griping pain still continued, we ordered it to be repeated, with an additional quantity of the sulphate of magnesia. Having frequent tenesmus, and his dejections consisting of pure blood, in considerable quantity, the purging mixture was repeated three times in the day, but without any decided advantage. Ten grains of calomel,

* The circumstances connected with this case led us to take full minutes of its progress at every visit. These we have given without abridgment, as we found attempts to curtail it, and at the same time to preserve its identity of interest, entirely out of our power. It should be recollected, that the patient was far advanced in life, had been long resident in warm climates, and had been subject to much fatigue, anxiety, and exposure to the causes of dysentery, previous to his attack. Hence, depletion at the period of his coming under treatment was not ventured upon; and when the symptoms absolutely required it, it could only be practised to a small extent. Throughout the treatment, we found it necessary, both from the symptoms of the disease, and the habit of body and constitution of the patient, to support his strength by nourishment and restoratives, in order that the powers of life might not sink under the means employed to remove the morbid accumulations in the large bowels, occasioning the disease.

with two grains of opium, were given at bed-time, and an anodyne draught was administered about one o'clock, A.M.

28th, *Five o'Clock*, A.M. — Passed a restless night; pain certainly easier, and less general; pulse 86; skin moist, but the hands are warm and dry; tongue not excited, but rather furred. — Habeat haust. cathart. ζ iv.

Seven o'Clock, A.M. — No effect from the medicine; dejections still consist of pure blood and mucus; some straining. — Habeat ol. ricini, ζ ij.

Ten o'Clock, A.M. — The oil has not had any effect; frequent tenesmus; no fæces. — Injiciatur enema domest.

Eleven o'Clock, A.M. — A good deal of mucus was brought away by the glyster, but no fæces. — Adhibeatur enema cathart. stat.

Two o'Clock, P.M. — Some fæces were brought away, and some hardened masses, like curdled milk, or the inspissated albumen of a boiled egg; there was no blood. — Repet. ol. ricini, ζ ij. stat. R Pilul. aloët. cum colocynth. ζ j.; submur. hydrarg. ζ ss.; sapon. Castil. \mathfrak{z} ss.; syr. simp. q. s. Ft. pilul. xxx. quarum omni horâ no. 1. capiat.

29th, *Five o'Clock*, A.M. — Passed the night more easily, and had some sleep, but frequent tenesmus; passed nothing but blood; feels soreness about the sigmoid flexure of the colon, but no fixed pain or griping; pulse 86; tongue furred, and rather excited around the edges. — Habeat haust. cathart. ζ ij. This was immediately rejected, in consequence of which the enema was repeated. The effect was extremely gratifying: dissolved fæces were passed in large quantities, and he felt immediate relief. On examining the part pained, we observed a large hard tumour, which appeared to have been occasioned by fæces collected in the sigmoid flexure of the colon. The pilul. aloët. et calom. was continued, and an enema repeated three times a day. Granulated and broken fæces of a green colour were afterwards passed, with small pieces of cheese-like matter, and flakes of mucus, tinged with black venous blood. Fomentations were also applied to the abdomen with good effect; for though the pain was not removed, the tumour was much diminished.

30th, *Five o'Clock*, A.M. — Complains much of fulness and tightness in the belly, with considerable soreness all over it, and pain on pressure; pulse 90; great thirst and restlessness. — R Submur. hydrarg. gr. x.; opii, gr. j. Ft. pilul. s. s. Descendat in balneum tepidum.

Eight o'Clock, A.M. — After he came out of the bath the pill was repeated. During the night he passed a good deal of blood and mucus, with a considerable quantity of black or greenish-coloured feculent matter, smooth and consistent; the soreness over the whole belly continues, and he has a sense of weight when he gets up; cannot bear

the least pressure on the descending colon or sigmoid flexure.—Appl. abdom. hirud. xx. Habeat haust. cathart.

The leeches were removed after having drawn about eight ounces of blood, and he felt faintish; the pain was completely removed; the draught operated freely; dejections feculent and granulated; no blood or straining; was greatly relieved in the evening in every respect, and slept well till ten or eleven o'clock; he had rubbed off the dressings from the leeches, and lost a good deal of blood; he was consequently low and weak. The bleeding was immediately stopped, and an anodyne draught given; but he had no more sleep till six o'clock, A.M., when he slept till eight. Awoke rather refreshed.

31st. — Feels very weak, and there is great want of energy in the pulse; took some arrow-root and wine three times during the night; stools this morning bloody; he is so much exhausted that the purgative was not ventured.

Evening. — Has taken nourishment during the day, and some wine; has passed a great deal of blood and mucus, but no fæces; complains of a constant desire to relieve himself, but has no pain, though, in attempting to stop the inclination, he feels faint; pulse rather improved towards evening; has taken a great deal of nourishment, which has remained on the stomach, and he is certainly better.—Adhibeatur enema anodyn. $\mathfrak{z}\text{ij}$. Pilul. calom. gr. x. et opii, gr. ij. conf. horâ sextâ. Longed for beer, and took a glassful.

September 1st. — Did not sleep during the whole night; tenesmus less frequent, in consequence of the opiate enema; sensorium slightly affected; dejections consist of pure blood and mucus; pulse weak and languid; thinks himself better on the whole. —R Ol. ricini, $\mathfrak{z}\text{ijss}$. stat. The oil gave him one rather copious feculent dejection, of a greenish colour, tenacious, crude, acrid, not particularly offensive, after which, about eleven o'clock, he passed again a considerable quantity of dark blood and mucus, without pain. These dejections continued till three o'clock, P.M., with an occasional discharge of feculent matter, which was very small in quantity; felt extremely faint, and had a cold sweat over the whole body, particularly at the extremities; pulse sunk very much, and the expression of the countenance altered. We think him much worse.

About Four o'Clock, P.M. — Had two dejections, copious and feculent; took two of the pilul. aloët. et calom., but we have been more anxious to feed him and keep up his strength, than to give medicine in his present weak state; has taken wine and a good deal of nourishment.

Six o'Clock, P.M. — No material change, except that he put his hand to his belly at times, as if he had pain, but he will not acknowledge any; pulse languid; extremities

cold; feels great weakness. — Applicetur emplastrum vesicatorium amplum abdomini. Repet. pilul. calom. gr. x., et opii, gr. ij. confect.

Eight o'Clock, P.M. — Passed much black coagulated blood, and has very frequent tenesmus. — R Decoct. cinchon. frigidi, ℥jss.; tinctura opii, ℥xl. Fiat enema, statim injiciendum. This remained about forty-five minutes, and then brought away very offensive feculent matter; but he had no call again till three o'clock, A.M., when the inclination returned, and more offensive feculent matter was discharged. — Repet. enema anodyn. ut antea. This kept him perfectly quiet till six o'clock, A.M. — Took arrow-root three times in the night.

2d. — The blister has drawn well; no sleep during the night; had some offensive feculent dejections this morning; feels very weak; no cold sweat; pulse 96, stronger and fuller; tongue clean, rather white; slept from six o'clock till seven, when he took three ounces of the cathartic draught. We have not yet removed the blister; the symptoms generally are rather more favourable; passed no blood since four o'clock, A.M.

Eight o'Clock. — The draught operated in an hour, and brought off a great quantity of fetid, feculent matter; urine of a healthy appearance, but small in quantity; pulse 100, fuller, symptomatic of irritation and weakness.

Eleven o'Clock. — Has passed some blood and mucus, with pieces of curdled albumen. — Adhibeatur enema anodyn. Habeat jusculum bovinum, et cyathum vini Bourdonnensis plenum. Continued to discharge fæces till one o'clock, after which the discharge of blood commenced. Anodyne enemas were given, and he took nourishment plentifully.

Five o'Clock, P.M. — Is cheerful, and much better. — Repet. pilul. calom., et opii, etiam enema anodyn. These brought off curdled-like matter; pulse rather accelerated.

Eight o'Clock. — Had another dejection of blood and mucus; slight singultus, which continued for one hour, and seemed to proceed from flatulence; slept till one o'clock, P.M.; passed feculent matter, with some blood and mucus; took some tea; pulse good; tongue white, rather furred. — Adhibeatur enema anodyn. ℥ij.

3d. — The pills began to operate at four o'clock, A.M., and he evacuated dark brown, feculent, offensive matter, with scybala; passed the night better than usual, but had no sound sleep; pulse improved; skin natural; tongue white, rather furred. — Habeat haust. cathart. ℥iij. This operated about seven o'clock; passed a very large quantity of granulated green fæces, with white shreds like curdled milk. These evacuations continued till two or three o'clock, when blood was again discharged, and continued to be so, at intervals of half an hour or an hour, during the remainder of the day.

On giving an emollient enema with opium in the evening, we observed a considerable abrasion of the internal coat of the rectum near the anus, with a small purple spot, which we took to be an hæmorrhoidal tumour; but on a more minute examination, we found the internal surface of the gut bare for some distance up, which we conceive to be the cause of this discharge of blood. He appears to be generally better; has no pain or uneasiness in the belly; pulse 96, soft and full; tongue rather white. The anus was frequently washed with diluted spirits; a liniment or unguent, made sufficiently liquid, with a small quantity of laudanum, was thrown up the rectum with a urethral syringe, to sheathe the gut from the acrimony of the fæces. — Repet. pilul. calom. et opii. Haust. amar. cum sennâ, ʒij. h. s.

4th. *Five o'Clock*, A.M. — Slept a little in the early part of the night; had a considerable discharge of blood, mucus, and flatus, in bed; the wash and unguent were used often during the night; looks better; pulse 92, full, soft, and regular; no pain; tongue rather foul, evidently from irritation. Took two large cupsful of arrow-root since three o'clock this morning. — R Haust. amar. cum sennâ, ʒijss.; sulph. mag. ʒij. Ft. haust. stat. sumend. Adhibeatur enema ex amylo, tinct. opii, et decoct. cinchon. confect. Cont. linimentum et lotio.

One o'Clock, P.M. — Passed green, viscid, feculent matter, the effect of the mixture; the enema remained some time, and came off without much blood; pulse good. Took some beef-tea. — Repet. pilul. calom. et opii, ac haust. amar. cum sennâ, et sulphatis magnes. ʒj.

Five o'Clock. — Dejections green, feculent, crude, acrid, less bloody; pulse 90; tongue cleaner; remained quite easy; discharge of blood and mucus diminished; no pain. — Repet. enema amyli, pilul. calom. et opii, ac haust. amar. cum sennâ, sine sulph. magnes.

5th. — Did not sleep much in the night, but lay quite easy; had frequent tenacious, green dejections, mixed with white shreds and a very small quantity of blood. — R Sulph. magnes. ʒij.; haust. amar. cum sennâ, ʒij. Ft. haust. stat. capiend.

Eleven o'Clock, A.M. — Passed an amazing quantity of dark green, gelatinous matter; pulse continues good; skin natural; tongue clean; took two basinsful of arrow-root with claret during the night, and had a cup of tea at half-past seven o'clock; he is now sunk into a slight, uninterrupted slumber; the excoriations about the anus, and abrasion of the gut, are certainly better; dejections still bloody, but in a small degree, and chiefly consist of the green gelatinous secretion mentioned above. — Habeat pilul. aloë. et calom., etiam haust. amar. cum sennâ, ʒij.

Half-past Two o'Clock. — Had two copious dejections of a yellowish green colour,

and more natural than they have hitherto appeared. Has taken some beef-tea and wine.

Five o'Clock, P. M. — Evacuations very much improved, and contain very little blood, passed without pain. — Repet. vespere pilul. aloë. et calom., ac haust. amar. cum sennâ.

6th. — Lay very quiet, but did not sleep till half-past one o'clock, A. M.; frequent tenesmus; passed blood and mucus; took some arrow-root and wine. Slept pretty well from that hour till four, A. M., when he awoke very much refreshed; passed during sleep small masses of viscid matter like the green fat of a turtle. — R Haust. amar. cum sennâ, ʒij.; sulph. magnes. ʒiij. Ft. mist. stat. sumend.

One o'Clock. — Had a copious dejection of a black colour, like coffee-grounds, not particularly offensive; dejections of a similar nature were frequently passed in the course of the morning. Took breakfast at half-past ten o'clock, with good appetite; slept a little afterwards; the same evacuations continue. — Repet. haust. amar. cum sennâ et sulph. magnes., ac pilul. calom. et opii.

Half-past Seven o'Clock, P. M. — Dejections natural, of a yellowish green colour, similar to those passed yesterday afternoon, but continued during the remainder of the day. — Repet. haust. ac pilul. ut antea. Adhibeatur enematis amyli, ʒiij. cum tinct. opii, horâ septimâ. The latter brought away a considerable quantity of the same kind of evacuations. Has taken some nourishment during the day, and drank some claret.

7th. — Passed the night excellently, and slept from one o'clock till near nine in the morning; evacuated a great deal of greenish, feculent matter, with blood and mucus; pulse 78; some appetite; took tea twice since eight o'clock. — Repet. haust. amar. cum sennâ, et sulph. magnes. ʒiij.

Ten o'Clock. — Dejections copious, dark-coloured, but well marked with bile, with very little blood or mucus; feels perfectly easy; took breakfast with good appetite.

Eight o'Clock, P. M. — Dejections during the day perfectly natural; took some food and wine; feels better on the whole, but is still troubled with a slight discharge of mucus from the rectum. — R Decoct. oryzæ, ʒiij.; opii, gr. vj.; ol. olivæ, ʒss. Fiat enema. A urethra syringeful was thrown up the rectum, which brought away a considerable quantity of figured fæces, in consequence of which we repeated it in the same quantity every three or four minutes for half an hour, and removed a great quantity of fæces; the rectum was completely cleared, and the last syringeful was retained.

8th. — Passed the night pretty well, and was only disturbed twice with the mucus discharged from the rectum; evacuated this morning grains of barley undigested, which

he had taken in broth yesterday; pulse 78; tongue clean; taste unpleasant. — Repet. haust. amar. cum sennâ, et sulph. magnes. ʒijj. This medicine did not operate fully till two or three o'clock, P.M., when it brought away a copious discharge of fæces of a pretty good appearance. During the day had slight tenesmus, and enemas of starch and opium were given frequently; towards six or seven o'clock, P.M., a very considerable quantity of green granulated fæces were discharged. He took during the day some food and wine. — The pills were continued.

9th. — Passed the night well, and slept till four o'clock, A.M., when he awoke much refreshed; slept again till ten o'clock, A.M., and felt rather fatigued. — Habeat ol. ricini, ʒijss.

Evening. — Passed, soon after he had taken the oil, a quantity of black, viscid, feculent matter; and similar evacuations continued till past twelve o'clock, when they changed to a bright yellow, and consisted of mucus with some natural fæces. This discharge continued the greater part of the day. Walked for the first time from his bed to the next room; sat up and ate some food with cheerfulness; pulse 79, good.

10th. — Passed a restless night; severe catharsis; dejections of a bright yellow colour, tenacious, with glairy mucus; no fæces; no pain; feels weak from the want of sleep; takes very little food; pulse 80. — Repet. ol. ricini, ʒss. This operated by nine o'clock, A.M., when he came out of his bed-room and ate a pretty good breakfast, but not with his usual appetite. The secretions of the alimentary canal appear to be perfectly healthy, and all the green and viscid matter discharged. — R Decoct. cinchon. ʒij.; acid. sulph. dilut. ʒx.; tinct. muriat. ferri, ʒxij. Fiat haustus, tertiâ quâque horâ sumend. He took four of these doses in the day, ate pretty well about three o'clock, and took some beer with great relish. Three people were present; and whether he was fatigued by the noise of conversation, or whether the beer disagreed with him, we know not, but almost immediately after, the countenance changed, the lips became white, and a cold moisture spread over his face and hands; pulse languid and weak; he did not complain of pain; went to bed about six o'clock, P.M.; discharged every hour during the night some dark-green and black matter; for the first time complained of griping. — Enemas were given frequently, and half an ounce of castor oil about five, A.M.

11th. — Rose about ten o'clock very much exhausted from the restless night he had passed, but went to breakfast; the oil operated freely; evacuations again quite black, green, tenacious, and mucous. Enemas were repeated. We kept him quiet during the day, and did not suffer him to see any body; he ate for the first time

the leg of a boiled fowl, and drank three or four glasses of Port wine; the cinchona was omitted, but a glassful three times a day of the decoction of angustura bark with water of ammonia was given; felt much better in the evening, and had less frequent motions; went to bed at seven o'clock, P.M.; lay quiet till nine, when the griping and catharsis of the same black viscid matter again commenced, and continued every hour till twelve o'clock, P.M. — Ten grains of calomel and an enema were administered; he passed the night afterwards very well, and had more sleep than usual; frequent catharsis afterwards.

12th. *Eight o'Clock*, A.M. — He is much refreshed this morning, and feels better. — Repet. ol. ricini, ℥ss. As he was griped again, we did not repeat the bark; had two or three dejections in the morning. Adhibeatur enema domesticum. Ate his breakfast and dinner with good appetite, and took a little animal food; no catharsis during the day, but frequent tenesmus, and he passed some thick mucus. — R Pilul. hydrarg., submur. hydrarg. āā ʒj.; syrup. simp. q. s. Ft. pilul. lx.; quarum jv. in die sumend. Habeat calom. gr. x., ac haust. amar. cum sennâ, ʒjss. h. s.

13th. — Passed a great deal of feculent matter of different colours, and some thick, viscid, and opaque mucus, during the night; took two cups of tea; slept better, however, than usual, and felt refreshed; pulse 76. — Repet. haust. amar. cum sennâ, et sulph. magnes. Frequent catharsis during the day; the first dejection after the medicine was dark green and black, tenacious, with masses of opaque, mucous-like fat; this latter appearance continued the remainder of the day, but the evacuations became at last perfectly natural; took four of the pills ordered on the 12th instant, in the day, and at night the bitter draught without the salts; ate to-day with good appetite.

14th. — Passed the night well, only disturbed three times; dejections of a natural appearance. — Habeat haust. amar. cum sennâ, et sulph. magnes.

Evening. — Two copious evacuations about an hour and a half after he took the draught, of a natural appearance; feels better; pulse 70, and never more in the day than 76 or 78; appetite improving on the whole, and he is better in every respect. — Repet. pilul. jv. in die, ac haust. amar. h. s.

15th. — Was only disturbed once after twelve o'clock last night; dejections natural; slept well; pulse 70; passed this morning a dark greenish, feculent evacuation; feels better. — Cont. pilul. Repet. haust. amar. absque sulph. magnes.

Evening. — Dejections during the day were good and natural, but frequent. — Repet. haust.

16th. — Passed a good night, and slept very well; had two copious, dark-coloured

dejections about seven o'clock; pulse good; no blood; no pain except from a furunculous pustule on the abdomen. — Repet. haust. amar. cum sennâ, ℥ij.

Evening. — Had several dejections during the day, at first green and viscid, but latterly perfectly natural. — Repet. pilul. Omit. haust.

17th. — Passed the night better; catharsis towards morning; dejections natural.

Five o'Clock, A.M. — R Haust. amar. cum sennâ, ℥jss.; sulph. magnes. ʒj. Ft. haust. stat. sumend. Cont. pilul.

Evening. — The medicines operated at nine and ten o'clock; evacuations quite natural; appetite excellent; passed the day well, and took a ride in the palanquin with much benefit. — Repet. pilul.

18th. — Passed the night better than usual; had catharsis towards morning; dejections natural. — Capiat haust. amar. cum sennâ, ℥ij. horâ quintâ. This operated at nine. Dejections natural. — Repet. pilul.

19th. — Passed a good night; dejections natural; pulse 76; gums tender; appetite good. — Capiat haust. amar. cum sennâ, ℥jss. Repet. pilul. j. in die.

20th. — Passed the night well, and was much better and stronger this morning; but the weather is so damp, wet, and cold, that he is much depressed. — Repet. haustus.

21st. — He is evidently stronger, but dejected. — Cont. med.

22d. — Seems extremely dejected, but is certainly improving. — Cont. med.

23d. — Took a ride in the palanquin in the evening; was much refreshed; passed some pure blood in the night; had slight griping, but he is improving. — Habeat ol. ricini, ℥ss. This procured him two or three copious, natural evacuations; passed some aliment undigested.

24th. — Passed the night better than usual, and was only up twice; pulse 70. — Repet. ol. ricini, ℥ss.

Evening. — Three small evacuations before twelve o'clock; is rather depressed. — R Acid. nitros. ʒj.; aquæ puræ, ℥ij.; sacchari purificati, ℥j. Ft. mist. cujus cyathus vinosus ter in die sumend. Dressed himself for the first time. Takes bread and milk for breakfast.

25th and 26th. — Has feculent but liquid dejections; no straining; rode out in the carriage. — Cont.

27th. — Pulse 70, stronger; strength improving; appetite indifferent, but gains ground.

28th. — Dejections natural; no griping or straining; pulse 72, good; thinks milk for breakfast lies heavy on his stomach. Let it be discontinued.

29th. — Passed a good night; dejections natural; rode out in the carriage; spirits tolerably good; he is gaining ground rapidly, but is still very weak.

30th. — Continues exceedingly weak, but is improving daily; evacuations natural; appetite improving; pulse 76. — Cont. mist. acid. nitros.

Evening. — Has passed the day well; rode out in the carriage; went to bed at seven o'clock, P.M.

October 1st. — Left Hyderabad, and made a march of six miles in a palanquin; he bore the journey pretty well, but was a little fatigued; bowels becoming quite regular; takes food with appetite, and sleeps well.

2d. — Marched thirteen miles this morning in a palanquin, and was much fatigued; ate breakfast, and was better; passed the day well. On the whole he has got through the day very satisfactorily. — Cont. acid. nitros. From this time he recovered progressively, without any thing further being given, except an occasional aperient. On the 26th October he mounted his horse, and continued to ride for an hour every morning before sunrise. On the 10th November he was perfectly well. It was necessary, however, still to keep a watchful eye upon his diet and regimen, to prevent a relapse, for two or three months longer.

Remarks. — Upon looking over the case, it must be obvious that the disease was produced by morbid accumulation in the large intestines, and by a depraved action of the liver. This accumulation might have existed for a considerable time, and, without the assistance of other causes, might have remained for a much longer period without producing disease. Our attention was directed to this condition, and our opinion was, that nothing but unremitting purgation would remove it; our only doubt being, whether his strength could support him through the necessary discipline. Presuming too little on the strength of his constitution, we were led into occasional excesses, which were not unattended with inconvenience, and which, without a strict attention, might have been accompanied with danger; but no symptom appeared that was not immediately combated; and by close attention, we very soon discovered the kind and quantity of support his constitution required. Beer once certainly did harm, and had not the symptoms at that moment been immediately counteracted, the consequences might have been serious. To many it may appear, that removal from a comfortable house to a camp, in a state of extreme debility, when the monsoon was not supposed to be over, was imprudent, as a relapse might have been productive of the most serious consequences. But as our patient was proceeding upon a very important command, we were not so much afraid of a relapse from the removal and the season, as from anxiety of mind and disappointment, if he were not permitted to

join the army, then proceeding upon active service; and we thought that the latter was more to be dreaded than the former; at the same time we were fully aware of the danger of removal; nor was it without the most serious deliberation we undertook the task of conducting it under the peculiar and important circumstances by which it was attended; and the result proved that we were correct.

SECTION VI.

Of Chronic Dysentery and Chronic Diarrhœa.

CHRONIC dysentery and chronic diarrhœa appear to depend upon the same pathological state of the intestinal canal, and to differ merely in degree, and in the more or less complete limitation of disorder to particular parts of the bowels. In the former, the mucous coat and follicles of the small intestines seem to be chiefly affected; in the latter, the same textures of the large bowels are the seat of disease.

An attentive observation of the phenomena of these diseases during the life of the patient, and a careful examination of the appearances after death, have led us to the adoption of the above view of the seat of disorder. As to its nature, however, much greater doubt may arise. Some may consider those affections to be essentially inflammatory, the vascular action being of a less active character than in the acute form of dysentery; whilst others may view them as resulting from deficient tone of the extreme vessels, accompanied with a morbid state of the secretions poured out upon the mucous surface, irritating the bowel, and exciting it to increased action.

To us it seems much more conformable with the symptoms characterising the progress of those affections to which the appellations of chronic dysentery and chronic diarrhœa have been given, and with the appearances observed upon dissection, to consider them as the result of inflammatory action of a

slow or chronic kind, occasioning organic changes in the structure of the part affected, consisting chiefly of enlargement and ulceration of the mucous follicles, with thickening and other lesions of the internal tunics of the bowel.

The *symptoms* of chronic dysentery are nearly those which we have already described as characterising the acute disease, except that they are much diminished in acuteness, and of longer duration. The tormina are either entirely wanting, or present in a slight degree, and the tenesmus is also less urgent. The stools are generally more or less serous, mucous, muco-purulent, and gelatinous, containing fluid, feculent matter, and substances varying in colour from a white, albuminous appearance, resembling the white of an egg, to a dark olive-green or greenish-black. Sometimes they are variegated or marbled, and occasionally one day seeming like chalk and water, and on another like a dark-coloured jelly, or the green fat of a turtle.

Blood is often seen in the stools, more or less intimately mixed with the evacuation, sometimes so closely incorporated with it as to give it a uniform brick-red appearance; at other times the blood is quite distinct, forming either one coagulum, or a fluid discharge, separate from the rest of the motion. A similar remark may be made in respect of the existence of purulent or muco-purulent matter. In some cases this matter is evident in the evacuations, in the form of small distinct streaks; whilst in many others no such appearance can be detected, even although ulceration of the colon is undoubtedly present. The alvine discharges are generally more copious than in acute dysentery, but the calls to evacuation much less frequent.

The pulse is very various. In the morning it is often but little accelerated, but its frequency generally becomes increased towards evening; and as the disease advances, it usually possesses more or less of the hectic character. The tongue is generally disordered, and the patient complains of uneasiness, or griping, or pain in the abdomen, especially in the course of the colon,

But these latter symptoms vary in particular cases; the emaciation, loss of strength, tenesmus, morbid state of the alvine functions and discharges, and hectic symptoms, being the most uniform signs of disease.

Chronic dysentery is generally the consequence of the acute form of the disease, of repeated attacks of common diarrhœa or cholera, and of fevers which have been neglected in their early stages, or improperly treated. Sometimes it supervenes primarily, but this is a comparatively rare occurrence; and on some occasions the disease is mild and chronic, and continues in this form for a considerable time, unexpectedly assuming the acute character.

Chronic Diarrhœa, in many of its symptoms and morbid relations, closely resembles chronic dysentery. It is usually observed, in the practice of warm climates, especially in India, after acute dysentery, or in consequence of repeated attacks of this disease; it also often follows upon frequent attacks of bilious diarrhœa, or of cholera. It is chiefly owing to the absence of tenesmus, tormina, bloody stools, and of fever, that it is distinguished from chronic dysentery. As to the frequency of the evacuations, and their general appearances, excepting the admixture of blood evidently possessing the characters of this fluid, both diseases are nearly alike. Indeed, as we have already stated, they are perfectly so as respects their nature, although differing somewhat in respect of the part of the intestinal canal in which they are respectively seated.

Both chronic diarrhœa and chronic dysentery may be associated with disease of the liver, in which case the affection of the liver is usually also of a slow or chronic nature, and most frequently implicating the internal structure of that viscus. When this complication exists, it is evinced by those symptoms which we described in the First Volume, when treating of the diseases of the liver. Amongst these symptoms, a dark green appearance of the evacuations, indicating a morbid state of the bile; or a pale clay colour, shewing a torpid state of the liver, or obstruction of the biliary ducts; a dirty, watery, and offensive state of the stools; a pearly appearance

of the eye; oppression or tightness at the epigastrium and lower part of the thorax; and sallow, muddy state of the countenance; with slight evening exacerbations of fever, and increased frequency of the calls to stool, are the most constant and prominent. This complication of disease, when present in the chronic as well as in the acute form, occurs generally amongst those who have resided for some time in a warm climate. Chronic diarrhœa and dysentery are also frequently observed supervening to the different forms of fevers which are met with in warm climates, especially in low and marshy situations, and where the advantages of good water are not enjoyed.

When either chronic dysentery or diarrhœa is associated with lesion of the liver, the morbid secretions of this viscus may be justly viewed as being the cause of the bowel disease. In some cases, the absence of bile, as evinced by the state of the evacuations, seems to have no small share in either producing or perpetuating the bowel affection. It seems as if a due secretion of bile, and the retention of it for a time in the gall-bladder, in order to undergo certain changes, were absolutely requisite, not only to the due performance of the digestive functions, but also to the preservation of a healthy state of the mucous surface of the bowels, and of the follicular apparatus and vessels distributed to it.

When the biliary secretion is not of that kind which is necessary to the change of chyme to healthy chyle, the alimentary matters form unnatural and unhealthy combinations, which, during their passage along the alimentary tube, irritate the sensible mucous surface, and increase both the capillary exhalation of this structure, and the secreting function of the follicular glands: and when, owing to the peculiar conformation of the cæcum and colon, these matters are retained, in conjunction with the disordered biliary secretion, in these bowels for any time, disorder is not only induced, but perpetuated in those situations, until the organic changes, observed upon the examination of fatal cases, are at last produced.

It is chiefly owing to obstruction of the biliary secretions, to the consequently deranged function of chylifaction, and to the diminished absorption

of the alimentary matters, from their imperfect preparation for the wants of the economy, together with the increased and morbid secretions proceeding from the follicular glands and mucous surface, that the stools present the aspect which has given rise to the appellation of "*white flux*." In cases of this description, the evacuations have the appearance of chalk or lime, mixed in a foul or turbid fluid; sometimes they have an intermediate character between this and the whites of eggs, and occasionally they resemble cream or yeast; they are often slimy, or with broken-down clay-coloured fæces mixed in the above whitish fluids. Evacuations of this kind often continue for a considerable time: in some cases they change to a darker colour, and afterwards return to the same white appearance. This is seemingly owing to the medicines exhibited, or to an occasional discharge of bile previously obstructed, which, by its admixture with the morbid intestinal secretions, gives them a dark colour.

When chronic dysentery or diarrhœa terminates fatally, this result is generally occasioned by ulceration, the ulcers having perforated the large or small intestines, and the contents of these viscera being effused into the peritoneal cavity. Not infrequently the colon, at some part or parts of its course, becomes permanently constricted, in consequence of the continuance of chronic inflammation, generally at first accompanied by spasmodic constriction of the inflamed part, the spasmodic contraction becoming at last permanent, from the change induced by the inflammatory action in the structure of the part constricted. When strictures of the colon exist to an extent sufficient to prevent the passage of the fæcal matters, then the part of the bowel above the constriction necessarily becomes distended so far as to interrupt the functions of the adjoining viscera, and even to occasion rupture of the coats of the distended part, the rupture generally taking place in the situation of an ulceration, if ulceration exists. When the distension of the colon, proceeding from constriction about the left arch or sigmoid flexure of the bowel, is followed by a fatal result, without rupture of the distended part, it is not owing so much to the mechanical effects of the continued distension upon the bowel itself and upon the adjoining viscera, as to the retention of excrementitious matters in the circulation, that death is induced.

Doubtless, the distended colon impedes the descent of the diaphragm, disorders the functions of circulation and respiration, causes congestion and effusion both in the thorax and in the head, and deranges the functions of the liver, stomach, and small bowels, as well as those of the kidneys; but during the long retention of fæcal matters in the *prima via*, in consequence of the mechanical impediment in the way of their discharge, a large portion of them is absorbed into the circulation, and thus destroys life by vitiating the source from whence it is perpetuated.

In the chronic forms of dysentery, the functions of the kidneys and urinary organs are often not materially affected: in some cases, however, these organs are considerably disordered, more especially those of the bladder. In the acute forms of dysentery, the functions of the kidneys themselves are occasionally very much deranged; suppression of urine being sometimes present, owing to the extension of inflammation from the descending colon to the left kidney on one side, and from the right lobe of the liver to the right kidney on the other; but this is seldom observed, excepting in the complication of acute disease of the liver with acute inflammatory disorder of the colon: in the complications of chronic disease of these viscera, suppression of urine is rarely observed, though *dysuria* and *stranguria* sometimes occur.

Although both chronic dysentery and chronic diarrhœa are occasionally met with in simple or uncomplicated forms, and even terminate fatally, without any appearances of disease being detected in the liver, yet such complications are much more frequent, particularly in India, than simple forms of these diseases; and not only is disease of the liver associated with organic changes in the large and small intestines, but the mesenteric glands, pancreas, spleen, and omentum, frequently also present signs of altered structure.

When the diseases now under consideration follow upon any of the various types of fever endemic to warm climates, particularly in India, the associated organs of digestion, especially the liver, pancreas, spleen, and

mesenteric glands, seldom are found in a sound or natural state. We do not mean to say that all these viscera present appearances of disease in the same case, although on some occasions two or more of them are changed in structure; but that some one of them is generally diseased, as well as the large and small intestines. In cases of this kind, the disease of the collatitious viscera, as well as that of the bowels, may have been consecutive upon the febrile disorder, or at least upon repeated attacks of fever, owing to the particular circumstances connected with the patient during its continuance, or during convalescence from it, and to the nature of the causes producing and perpetuating disease. Thus, during a severe or protracted attack of fever arising from terrestrial exhalations, vicissitudes of temperature, fatigue, and irregular living, the liver, pancreas, and spleen, not infrequently become disordered in function, and sometimes also diseased in structure. To this state sometimes is also conjoined a morbid condition of the bowels, assuming either the form of dysentery or chronic diarrhœa, which frequently becomes the prominent affection, exhausts the system, and deranges the functions of all the vital organs. Such a sequence of morbid action is often met with amongst Europeans in warm climates, and especially in soldiers during the fatigues and exposures of an active campaign.

The causes of chronic dysentery and chronic diarrhœa are altogether the same, as we have already adduced with reference to the acute forms of the disease. We shall not, therefore, occupy our limits by enlarging upon this particular part of the subject, farther than to state, that whilst acute dysentery occurs most frequently amongst Europeans who have not resided long in a warm climate, the chronic affection is most prevalent in those who have suffered from previous attacks of disease of the stomach, liver, or bowels, and is much less frequently met with in a simple or uncomplicated form than the acute dysentery. Nor shall we remark, at this place, upon the symptoms indicating a favourable or unfavourable termination of the particular forms of the malady now under consideration, as they are altogether similar to those we have instanced in a previous section.* As to the

* See the section on the acute forms of Dysentery, pages 152 and 167.

appearances, however, which most frequently present themselves upon the examination of fatal cases of this form of disease, it will be necessary that we make some additions to what we have stated, with a stricter reference to the acute and sub-acute forms of dysentery.

The omentum is sometimes thickened, corrugated, drawn up to the colon, or to one side: it is not infrequently adherent to some part of the bowels, or to the brim of the pelvis, and occasionally to both. The stomach and small intestines are generally much distended with an offensive gas: more rarely the small intestines are irregularly constricted and thickened in their coats; and we have even found very extensive intus-susceptions in various parts of the ilium. With respect to their colour externally, they are generally very similar to that already described as belonging to the acute disease. Occasionally, firm and cellular adhesions are found connecting the external surface of the small intestines to the omentum, or to the cæcum or colon, or even one convolution of them to another.

The cæcum generally presents decided appearances of disease externally, but its internal structure is most extensively deranged: it is frequently distended with flatus, its coats thickened, its peritoneal surface covered in parts with coagulated lymph, and the cellular substance connecting it to the abdominal parietes inflamed, thickened, and easily lacerated. The colon is frequently distended in one part and contracted in another; but it sometimes is found very much enlarged and distended throughout, and devoid of its usual divisions into cells or compartments. Coagulable lymph is often seen on its surface, firmly uniting one part of it to another, and to the adjoining viscera, especially to the liver, stomach, spleen, &c. This is most frequently observed when ulcerations have nearly perforated all the tunics of the bowel, and the inflammation proceeded to its peritoneal covering.

Occasionally, when adhesions have taken place between adjoining parts of the peritoneum covering these viscera, or when the internal ulcerations have proceeded so far as to have induced peritonitis, and the patient has lived some time afterwards, the peritoneum presents appearances of chronic inflam-

mation throughout a greater or less extent of surface, it being greatly thickened, more vascular, and the adhesions firm and organised.

The internal surface of the bowels generally presents the most constant and most extensive lesions in the forms of disease we are now considering. The coats of the small intestines are often tumid and thickened, especially the mucous and sub-mucous tunics, with ulcerations in every stage of their progress. Accompanying this state, there are also observed, more or less, signs of inflammatory action, either in the seat of the ulcerations or in the spaces between them. The ulcers, in chronic diarrhœa, generally commence in the follicular glands, and are most numerous in the ilium, particularly in the lower parts of it. The mucous surface surrounding the ulcerations is often thickened, elevated, and of a deeper colour than natural. Sometimes the ulcers are small, numerous, and agglomerated in patches, conformably to the disposition of the follicles of the intestines: at other times, and in different parts of the bowel, the ulcers are large, distinct, few in number, and placed distantly from each other. Occasionally the surrounding texture is pale, and the edges of the ulcers thin and soft; frequently they are elevated upon thickened bases, and their edges prominent and rounded.

Ulceration is seldom met with in the small intestines, even in chronic diarrhœa unattended with the characteristic symptoms of dysentery, without extensive ulceration being also present in the cæcum or sigmoid flexure of the colon. When the dysenteric symptoms have been present, the disease of the rectum, colon, and cæcum, is generally very manifest, and usually consists of ulcerations similar to those now enumerated, and to those described in the section on the appearances after the more active forms of the malady.* Conjoined with ulceration, a contracted state of the bowels, particularly of the colon, at its left and sigmoid flexures, is generally present; and the parietes of the intestinal canal, sometimes of the small intestines, and almost always of the large bowels, are more or less thickened. Occasionally, the coats of the colon, rectum, and cæcum, are not

* See page 255.

only thickened and internally ulcerated, but also much indurated, and converted into a gristly or semi-cartilaginous state, and generally of a very dark hue,* evidently owing to the long-continued irritation and inflammatory action kept up in the part, sometimes from the nature of the disease and peculiarity of constitution, and occasionally from inappropriate treatment, as shewn in some of the following cases.

The indurated and thickened state of the coats of the intestines is a very evident result of slow inflammatory action, especially as those states are generally either associated with ulcerations of a chronic kind, or with considerable contraction of the calibre of the bowel at the part thus changed in its organisation. Although not so lacerable as in those cases which have terminated fatally, the coats of the diseased intestines are generally more easily torn than in the healthy state, unless when they are of the gristly hardness already noticed.

Constriction of a part or parts of the colon, most frequently of the left arch, descending colon, and sigmoid flexure, are amongst the most constant appearances observed upon examinations after death from the chronic forms of the disease now before us. These constrictions may be few or they may be many,—they are often of limited extent, resembling the ligature made by a cord, and frequently embrace a large portion of the bowel.† They are generally accompanied with ulceration and thickening of the internal tunics of the intestine, but not uniformly so; and they usually present signs, either internally or externally, or both, of inflammatory action.

These strictures are, from their situation, beyond the reach of art, and little more can be done than to keep the contents of the bowels in a fluid state when we have reason to believe that they exist. But strictures also take place as a consequence of the various forms of dysentery and diarrhœa, between the sigmoid flexure of the colon and rectum, and in the rectum itself. It is chiefly to constrictions in this latter situation that attention has been

* See Plate XL. fig. 1. † See Plates XXVI. XXXVI. and XXXVII.

directed by writers; and the idea that they are limited to the lower parts of the large bowel has been too generally entertained. A knowledge of the frequent occurrence of strictures in various parts of the colon, especially in its descending and sigmoid flexures, is of the utmost consequence in practice; and the frequent association of stricture of this bowel with that of the rectum is equally important, inasmuch as it teaches us not to confine our methods of cure to the rectum itself, but to extend them to the large bowels generally, as far as this end can be accomplished by means of gentle laxatives and emollient enemata.

We believe that stricture of the rectum is not so prevalent a complaint as is supposed by some. As respects the comparative frequency of this lesion in the rectum and colon amongst Europeans in India, we may state our belief that the colon is much oftener affected than the rectum, and we are much inclined to believe that the same equally obtains in England. Indeed, we are convinced, that strictures of the colon oftener occur, especially in the sedentary, both male and female, particularly the latter, even without being the consequence of acute dysentery, and occasion various disorders and symptoms, which have been too frequently looked upon as merely nervous, and as complications which puzzle the physician. This is a subject of much importance, and deserves more attention than has yet been directed to it.

Contractions of the colon may be viewed as the result of repeated attacks of disease of the bowels, or of a single attack which had been protracted beyond the usual duration of the acute disorder, and had degenerated into the form of chronic diarrhœa. In those cases wherein the contractions are extensive, and the bowel reduced much in its calibre, the small intestines and cæcum, in addition to an inordinate state of distension, are generally inflamed and ulcerated in their internal surfaces; and occasionally the liver and pancreas also betray signs of disease. How far these appearances may have resulted from accumulations of acrid fæcal matters in them, owing to their being retained in these parts of the *prima via*, and to the consequent absorption of acrid matter into the circulation, the reader may decide for himself.

In those cases of chronic diarrhœa and chronic dysentery proceeding from attacks of fever and disease of the liver, the small intestines are seldom or ever free from morbid appearances, generally consisting of ulceration and inflammation, with thickening of their tunics. When the chronic disease is chiefly the result of acute dysentery, structural changes are generally more completely confined to the cæcum, colon, and rectum.

In a very large majority of the cases of chronic diseases now under consideration, in which we have inspected the bodies after death, — and such cases have been almost always examined by us, — the mesenteric glands have generally been enlarged, obstructed, hardened, and apparently infiltrated with a sero-purulent matter. The mesentery has also presented, in some cases, appearances of inflammatory action in its surface. And almost in every case, the vessels running between the peritoneal duplicatures forming the mesentery have been large and injected with blood, evidently evincing increased determination of blood to the seats of disease, in its chronic as well as in its acute forms.

Chronic dysentery, as well as chronic diarrhœa, are met with amongst the natives of India, although not so frequently as amongst the Europeans resident in the country. Amongst them these disorders present more decidedly the characters of a gleety discharge from the bowels, and are more evidently the result of deficient tone in the vessels and follicular glands of the digestive mucous surface, whilst the inflammatory character of these complaints is most prominent in the European constitution.

Upon examination after death from these maladies, amongst the natives, the bowels are generally soft, flaccid, of a pale colour, excepting in a few parts of their internal surface; the follicular glands much enlarged, ulcerated, or of a dirty, sloughy appearance, and the coats of the intestines seldom thickened, although sometimes constricted in their diameters. The cæcum and sigmoid flexure of the colon are, as in Europeans, the parts most deranged in structure, and are often easily torn. The liver is seldom

diseased, the spleen sometimes is much softened, and the pancreas and mesenteric glands much enlarged.

CASE CCI. — *Chronic Dysentery, acute symptoms supervening, with disease of the Liver; Chronic Peritonitis, &c.*

WILLIAM HIZARD, aged 40, was admitted on the 27th of July, 1816, on the march from Trichinopoly to Kurnool, in a weak and emaciated condition. Had suffered from attacks of dysentery, and has been labouring under symptoms of chronic dysentery for some time. Complains at present of pain in the abdomen; sickness at stomach; tongue foul; skin cool. — Sumat haust. purg. $\bar{3}$ ij.

Evening. — Belly feels tense and elastic; pain severe; pulse frequent. — Sumat hydrarg. submur. $\bar{3}$ j. h. s. Etiam adhibeatur enema purg.

28th. — Feels much better this morning; frequent catharsis in the night; hardness of the belly diminished. — Sumat ol. ricini, $\bar{3}$ ij. Repet. enema purg.

Evening. — Dejections frequent, scanty, mucous, of various colours; feels much pain in the belly, particularly above the pubes. — Repet. hydrarg. submur. gr. xx. h. s. Appl. hirud. xvj. abdom.

29th. — Dejections scanty, watery, with some feculent matter; pulse 72, hard; considerable anxiety, and uneasiness over the belly, particularly along the transverse arch of the colon; skin dry; tongue parched and white; great thirst; no appetite. — Sumat ol. ricini, $\bar{3}$ ij. Injiciatur enema emol. R Mist. salin. $\bar{4}$ j.; spirit. æther. nitros. $\bar{3}$ ij. Sumat $\bar{3}$ ij. omni horâ.

Evening. — Bowels easy; dejections frequent, scanty, more feculent, with masses of coagulated blood. — Repet. mist. salin. R Hydrarg. submur. $\bar{3}$ j.; cons. rosæ, q. s. Ft. pilul. R Tinct. opii, \mathfrak{m} xl.; spirit. æther. nitros. \mathfrak{m} xx.; aquæ puræ, $\bar{3}$ ij. Ft. haust. qui, cum pilulâ, horâ somni sumend. sit.

30th. — Pulse 88, rather hard; tongue dry and furred; feels very little pain in the lower part of the abdomen, but there is a particular hardness, as if there had been peritoneal inflammation; he has derived very little relief from the leeches; the pain of which he complains most is in the course of the great arch of the colon, but he will not, or rather cannot, from natural imbecility, tell what he feels: he passes his stools involuntarily; they consist of some mucus, mixed with feculent matter, and latterly, of water mixed with blood; sickness at stomach. We fear this man's constitution will not bear him through this attack. — Injiciatur enema emol. Sumat haust. purg. $\bar{3}$ j. Appl. abdom. emplast. lyttæ amplum.

Evening.—Pulse 86, feeble, rather hard; tongue furred, slightly dry; considerable catharsis; pain alleviated; complains much of the blister; much thirst.—Bibat infus. tamarind. Injiciatur enema purg. R Mist. amar. cum sennâ, ℥ij. stat. sumend. N.B. Dejections feculent, and more copious.—R Hydrarg. submur. gr. xx. h. s. Cont. mist. salin.

31st.—Had very little sleep in the night; felt the blister very painful; no pain in the colon or lower belly; tongue cleaner and moister than it was yesterday; dejections watery, of a dark-brown colour, with a tinge of yellow, and mixed with small pieces of white shreds, like skin; pulse 72, full.—Sumat haust. purg. ℥j. stat., et repet. omni horâ dosis donec alvus benè responderit. Diæta mucilag.

Evening.—Pulse as before; tongue chopped, moist about the edges, and dry in the middle; pain abated; dejections green, consisting of mucus, with some feculent matter.—Sumat hydrargyri submuriatis, gr. xx., et haustum anodynum cum tinct. opii, ℥l.

August 1st.—No pain; tongue cleaner; pulse 84; dejections frequent in the night, consisting of bloody water, mixed with some fæces; talks childishly.—Injiciatur enema emol. Sumat ol. ricini, ℥j. Cont. mist. salin.

Evening.—Tongue cleaner; pulse small and frequent; dejections bloody. We fear this man will not recover.—Repet. enema emol. Cont. mist. salin., cui adde tinct. opii, ℥lx.

2d.—Was very restless during the night; pulse 104; constant tenesmus; dejections bloody; abdomen tense, but not painful on pressure; appetite good.—Sumat haust. purg. ℥ij. Injiciatur enema emol. Diæta ut antea.

Evening.—Tongue cleaner; skin moist and warm; pulse 104, small; dejections frequent, consisting of black grumous blood; eats very well: still we think he cannot recover.—Habeat haust. amar. cum sennâ. Injiciatur enema emol.

3d.—Pulse 120, not small or hard; tongue dry, chopped, of a dark-brownish colour, clean, and red at the apex; dejections watery, of a dark-brown colour, mixed with a light-brown sediment, like dissolved fæces; abdomen firm, full, and unyielding, as if from unnatural adhesion of the viscera; appetite very good; he is not sensible of his situation, but thinks himself better.—Repet. enema emol. et haust. amar. cum aquæ ammon. ℥xxx. bis in die.

Evening.—Pulse the same as in the morning; tongue yellow and moist; belly hard, not painful; no unpleasant odour exhaled from the body; eats some food; dejections as before; has been walking about a good deal.—Cont. enema et haust. ut antea.

4th. — Was very restless during the night ; pulse small, languid ; says he is better, but is certainly sinking very fast ; dejections last night of a brown colour, watery, without blood ; no pain ; nature appears to be completely exhausted ; medicine cannot be of any use to him ; evacuations this morning of a pale yellow colour, without blood. —Habeat cyathum vin. albi stat. Repet. enema emol.

At one o'clock, P.M. he expired without a struggle.

Examination, three hours after Death. — The liver, arch of the colon, stomach, and diaphragm, formed one solid mass, which could hardly be divided : there were strong adhesions throughout the great and small intestines, with some slight appearance of inflammation. The caput cæcum and colon were so firmly attached to the parietes of the abdomen, that they also appeared like a solid mass. The small intestines were of a darker colour than usual, generally of a purplish hue, and parts of them very much contracted : their structure was not much changed : they contained a considerable quantity of feculent matter. The whole of the great gut, from the caput cæcum to the rectum, was in a state of deep ulceration, and in many parts the ulcers had made way through the viscus, and the contents were confined merely by the adhesions of the surrounding parts. The liver was soft and flaccid, much smaller than usual, and extending considerably down the right side. It was covered by a thick peritoneal coat, to which and to the diaphragm it was so firmly attached, that they could not be separated without cutting into its substance. The convex surface appeared as if the peritoneal coat had been removed, and was so tender, that we could easily perforate it with the finger. Both lobes of the lungs firmly adhered to the pleura costalis. The spleen was smaller than usual. The kidneys were natural. On laying open the great intestines from the rectum upwards, a large cyst was found just at the commencement of that viscus, much thickened by disease, and a ragged ulceration continued through its whole course. The ilium was not at all diseased ; but the caput cæcum and transverse arch of the colon exhibited the same appearance as the rectum, great thickening of its structure, and its coats lacerated and ulcerated throughout. — See Plate XXI. fig. 3, Vol. I.

CASE CCII. — *Chronic Dysentery, cartilaginous state of the Colon, &c., produced by the Infusion of Tobacco and Tamarind Water.* — (See Plate XL. fig. 1.)

PETER CARR was admitted into hospital 18th April, 1816, with venereal ulcerations, from which he recovered under the usual treatment : in May he complained of pain in his side, with dysenteric symptoms, which yielded to mercurial purgatives and the

occasional application of leeches, and he returned to his duty in the end of May. About the 8th of June the pain in his side returned, and his bowels became irregular; the motions morbid, tenacious, and offensive. Calomel in full doses was given, with purgatives in the morning, and a flannel bandage was applied to the abdomen; these were continued with considerable relief, but he evidently lost ground. On the 28th he came under our charge; and the preceding reports have been taken from the diaries of the medical officer who had charge of him during our absence on other duties. We found him evincing great anxiety and debility; pulse 114; a general fulness over the whole abdomen; motions copious and watery; no feculent matter; and does not complain of any pain. It is supposed that he has been taking some narcotic preparation from the natives to avoid doing his duty,—a practice sometimes had recourse to by soldiers, *to cheat the doctor, as they call it*. He has no symptom to enable us to form any correct judgment of his case; but as he complained of thirst, the diluted nitrous acid drink was prescribed, with strict attention to his diet. Sago, wine, sugée, milk, &c. &c. were ordered, and continued from the 28th of June till the 1st of July, but without any permanent benefit, except that his motions became less watery and more feculent. The bowels were regulated by enemata.

Evening.—His stools have become bloody and watery, but he has no pain; pulse frequent and strong. The symptoms are so obscure, and there is altogether something so singular in this case, that we have no hope of his recovery.—Calom. gr. x.; opii puri, gr. ij. h. s. s. Cont. enema, diet, &c.

2d.—Has passed more feculent matter than he has yet done; but there is also a great deal of bloody water, as if ulceration had taken place in the bowel; says he is better, though he passed a bad night; he had a little sleep this morning; tongue moist, of a brown colour; teeth dry, and covered with sordes; pulse intermits every second stroke; skin natural temperature, and moist.—Repet. enema emolliens. Cont. diet, &c. ut antea.

Evening.—Stools the same as morning, bloody water; tongue of a dark-brown, red colour; pulse small and frequent.—Cont. ut antea. R Opii puri, gr. ij.; pulv. ipecac. gr. jss.; pulv. Jacob. gr. ij. Ft. pilul.

3d.—Stools the same, watery and bloody; no feculent matter; says he is better, but he appears to be sinking fast; pulse small and weak; skin covered with cold, clammy perspiration; he passed a very bad night. It is singular that this man has never, since we have seen him, complained of pain or uneasiness of any kind, but on all occasions says he is better.—Haust. anodyn. h. s. s. Cont. acid. nitros. and diet, as before.

Evening. — Skin warm; pulse better; tongue cleaner; feels no uneasiness at all, but he is evidently sinking; expresses a strong desire for butter-milk. — Let him have butter-milk; and cont. ut antea. Repet. pilul. ipecac. et opii, ut antea.

4th. — Stools more feculent than ever; no blood at all; says he passed a better night; pulse 110, very small and weak; skin covered with profuse perspiration, not cold; his countenance is much altered for the worse; tongue dry, but perfectly clean, smooth, and of a peculiar dark-red colour, like diluted port wine; the butter-milk has gratified him exceedingly. — Cont. ut antea.

Evening. — Stools more feculent, and no blood; pulse fuller, but very quick; skin covered with warm perspiration; tongue dry. — Cont.

5th. — Stools bloody, with feculent matter in them for the first time; he acknowledges he is worse this morning; pulse small and fluttering; breathing oppressed and quick; skin cold; mouth dry. — Cont.

6th. — Complains this morning (six o'clock, A.M.) of violent pain through the chest, as I understand him, in the course of the diaphragm; pulse not to be felt; he lingered till ten o'clock, A.M., when he died.

Examination, two hours after Death. — Some water was found in the abdomen; strong adhesions between the omentum and peritoneum; the whole of the small intestines were uncovered, and of a very pale colour; the omentum collected round the colon, and firmly attached to it and the cæcum; the liver much paler than natural; the gall-bladder full, and colour quite white; the stomach inflated, and of an exceedingly pale colour. The small intestines, from the duodenum to the ilium, were contracted to one-half the natural size throughout their whole course; they were laid open, and much green, bilious matter was found in the ilium, but no ulceration; and the valvulæ conniventes were greatly enlarged and thickened. The colon was laid open from the cæcum to the rectum, and exhibited a most singular diseased appearance; the cæcum appeared to be in a state of inflammation, while the transverse arch of the colon to the rectum was one continued cartilaginous mass, of a dark brownish-green colour, resembling Bramin's beads. — (See Plate XL. fig. 1.) This appearance we have often seen before in hard drinkers. The right lobe of the liver was of a very pale colour, adhering firmly to the side and diaphragm. The left lobe was free from adhesions. The pericardium was of a large size, filled with water: a considerable quantity of fat about the heart, and its muscular fibres were more flaccid than usual.

Remarks. — It appears that this man had for some time been in the habit of taking every morning a small quantity of infusion of tobacco and tamarind water, with the

intent of deceiving the doctor, as he thought, and in the hope of getting his discharge from the regiment. The symptoms throughout did not belong to any class of disease that we had been in the habit of treating, and we suspected from the first moment we saw him that there was foul play, and frequently taxed him with an attempt to mislead us, and the dangerous consequences of such conduct; and it was not till after his death that we ascertained the fact. This is by no means an uncommon practice amongst the soldiery in India, when they want to effect their discharge; and we have no doubt it often lays the basis of the most formidable diseases. The attention, therefore, not only of the medical officer, but of the regimental officers generally, should be drawn to this practice; and when men linger in hospital with symptoms that cannot be applied to any disease, attention should be drawn to the habits and feelings of the individual by the officers and non-commissioned officers of his company.

CASE CCIIL. — *Chronic Dysentery after simple acute Dysentery.*
Examination after Death.

WILLIAM CLARENBOULDE, aged about 30, had been long under treatment for acute dysentery, for which vascular depletions, purgatives, and afterwards mercurials, with anodynes, diaphoretics, and emollients, have been employed, without further benefit than that of subduing the acute symptoms. Has been copiously salivated without any permanent advantage; still complains of uneasiness in his bowels; stools morbid; mouth still sore.—Haust. cum tinct. calumb. \bar{z} ss.; aq. menth. pip. \bar{z} ij. Enema anod.

March 2d, 1816.—Somewhat better; stools rather clay-coloured.—Haust. cum tinct. calumb. \bar{z} ss.; haust. anodyn. \bar{z} ij. at ten o'clock.

Evening.—Stools pretty good; very little pain.—Enema anodyn. at night.

3d.—Pretty easy; stools are more copious, but of a redder colour.—Cont. haust. cum calumb. Enema anodyn.

Evening.—Still dull pain of belly; stools improved.—Enema anodyn. at night.

4th.—Complains much of soreness of the abdomen, and it is more tense; pulse 96; tongue loaded; mouth sore.—A bolus with submur. hydrarg. gr. viij., extr. colocynth. gr. xij., ol. ainsii, \bar{m} ij. stat. Enema emolliens horas post quatuor.

Evening.—Complains much of pain in the belly, which is more tense than formerly; stools as usual; pulse 89.—Apply a blister to the umbilicus. Haust. cum tinct. opii, \bar{m} xxx. Enema anodyn. h. s.

5th.—Stools brick-coloured, with increase of pain; blister is rising; had some ease from the draught; pulse 76; tongue loaded; mouth sore; is much emaciated,

especially the last fifteen days, and countenance changed; debility great. — *Haust.* cum tinct. calumb. ʒj.; tinct. opii, mxxx. Enema anodyn.

Evening. — Stools are reddish; much distress from the almost constant pain at his belly; blister seems to have given little relief; pulse 89; tongue loaded. — *Haust.* anodyn. Enema anodyn.

6th. — Is sinking fast; passed a very bad night, with constant pain and distress, which opiates cannot alleviate; this morning, skin cold; clammy sweat; countenance sunk; tongue loaded; teeth covered with dark mucus; stools are not different from their former state; pulse scarcely to be felt at the wrist; pain of belly still continues in a slighter degree; in every respect he appears near his dissolution; great emaciation and debility; wishes for an anodyne draught.

7th. — More heat and warmth than at last visit; pulse at the wrist 120, feeble; tongue yellow, in part clean; still feels pain of belly; had hiccup. — Anodyne enema. Wine and arrow-root.

Evening. — Is dying; no pulse; hiccup more constant; extremities cold; tongue and mouth loaded with dark scurf; no delirium, and complains still of pain at the abdomen. Died at ten o'clock, P.M.

Examination after Death. — On opening the abdomen, the omentum was observed to be collected around the arch of the colon, forming strong and thick adhesions to that intestine. The colon was the seat of disease in this subject. From the caput cæcum to the rectum it presented one uniform mass of ulceration. The rectum was very little affected, unless at the upper part, to which the disease extended from the colon. The liver seemed slightly enlarged, but it presented no alteration in structure or organisation, nor any vestiges of former or recent inflammation. The stomach, spleen, and other viscera, seemed sound.

Remarks. — After vascular depletions and purgatives had failed of curing this patient, the influence of mercury pushed to salivation was tried, but with no advantage. Indeed, many of the symptoms became more urgent, especially the hæmorrhage from the bowels. This, however, is not an unusual occurrence in the simple and uncomplicated dysentery; for we believe that, in this form of the disease, whether acute or chronic, whether severe or mild in its symptoms, mercury, pushed to a great length, is often prejudicial. It has frequently fallen to us to remark, that simple dysentery, with copious hæmorrhage in the stools, and tenesmus, has supervened upon the active use of mercurials in venereal diseases, which are so frequent amongst the European troops in India, especially after producing salivation, and often immediately upon the affection of the mouth by this remedy. These circumstances serve to shew

that salivation, however beneficial it may be in the dysentery which is complicated with disease of the liver, is often hurtful, when carried too far, in the simple form of the malady.

CASE CCIV. — *Chronic Diarrhœa, with Thickening of the Substance of the large Bowel.*

——— OWEN, died at Bangalore, 5th August, 1814. He had laboured under chronic flux of upwards of four months' duration. The stools were copious, frequent, mucous, pale, and without blood; but with occasional griping and tenesmus. Local depletions, purgatives, anodynes, alteratives, mercurials, emollient injections, afterwards gentle tonics, astringents, &c. had been employed with only temporary advantage.

Upon *examination* after death, the internal coat of the cæcum, colon, and rectum, was found in a state of chronic inflammation throughout, being more vascular than natural, and the mucous follicles enlarged. The parietes of the colon were much thicker than in the healthy state. The mucous surface was entirely free from ulceration and sphacelation. The internal surface of the small intestines was slightly inflamed in a few patches. The liver was perfectly sound. The mesenteric glands were enlarged.

CASE CCV. — *Chronic Dysentery with Constriction of the Colon.*

J. EVANS died on the 1st of March, 1814, after a tedious illness of several months. He had experienced an acute attack of simple dysentery, which had degenerated into a state of chronic diarrhœa. The stools, from being bloody, green, and mucous, had a yeasty and fermented appearance, without blood, and were pale, fluid, and frequent.

Upon *inspection after death*, the cæcum was found ulcerated internally; and from the right arch of the colon to the rectum the bowel was greatly diminished in its diameter, and its coats thickened. The internal surface was ulcerated throughout, the bases of the ulcers thickened, elevated, and the centres foul, dark-coloured, and penetrating nearly through all the tunics of the viscus. The liver was perfectly sound. The mesenteric glands were much enlarged; and the lungs were studded with tubercles in different stages of their progress, some being hard, others softened and ulcerated.

Remarks. — The above case was communicated to us by the late Dr. Greig, a gentleman who, for his professional acquirements and moral worth, was esteemed by the profession in India, and by the European community.

CASE CCVI. — *Chronic Diarrhœa. Examination post Mortem.*

J. JAMESON died on the 7th January, 1817, of chronic diarrhœa, after an illness of long duration. He had suffered from several attacks of dysentery, from the last of which he never completely recovered. The stools were thin, watery, voided without pain, straining, or griping. His countenance pale, sunk, and heavy; tongue red, smooth, and marked with fissures; pulse quick and weak; the body much emaciated.

On *examination after death*, the liver was apparently sound, but of a paler colour than usual. The internal surface of the ilium was slightly inflamed; the follicles enlarged, and small ulcers evidently studded various parts of the intestine, particularly near its termination in the cæcum. The cæcum and colon were also inflamed and slightly ulcerated. The mesenteric glands were greatly enlarged and indurated.

Remarks.—This man had been long in India; and although the liver is very frequently affected in the form of disease of which he died, yet it presented in him no marks which could be unequivocally accounted morbid. About the same time that this man was under treatment, three cases of chronic diarrhœa, occurring in old residents in India, who had often experienced attacks of acute dysentery, terminated fatally. The large and small intestines presented the appearance of erythematous inflammation and atonic ulceration. The coats of the bowels were thickened, softened, flaccid, and could be torn with ease. The liver was somewhat paler and harder than natural, and rather smaller. The gall-bladder of two of them contained a pale, glairy bile. The mesenteric glands were more or less enlarged and indurated in them all. Indeed, the above appearances are very frequent in chronic diarrhœa, which generally occurs in old residents in warm climates, who have suffered repeated attacks of bowel complaints.

CASE CCVII. — *Constrictions of the Colon, &c. after frequent Attacks of Dysentery.*

Examination.—(See Plate XXXVII. figs. 1. and 2.)

JOSEPH HAGARDISH, aged 52, an infirm and paralysed man, who has been long in India, and suffered much from hepatitis and dysentery, was admitted on the 1st November, 1816, into hospital. He complains chiefly of loss of power of the lower extremities, general debility, and of chronic diarrhœa. Stools watery, frequent, and pale; has heaviness of his head; pulse 65; he seems quite out of the reach of medicine. Apply a blister to the nape of the neck, and regulate his bowels by means of the blue-pill at night, and the bitter aperient mixture in the morning. Give gentle

nourishment and camphor, with the saline mixture, through the day. This plan was continued until the 20th.

20th. — Perfectly sensible, but cannot speak; eyes quite clear; has lost entirely the use of his limbs; pulse 96. — R Mist. camph. \mathfrak{z} ij.; spirit. æther. vitriol. 3ij. M. a table-spoonful every three hours.

Vespere. — No change for the better; takes his food and medicines.

22d. — No alteration. — Cont.

Vespere. — Appears to be sinking fast; pulse very quick and small.

23d. — Is nearly exhausted; breathing very laborious; skin very hot; pulse very quick; can hardly take any nourishment. Died at eleven o'clock, P. M.

Examination. — On laying open the abdominal and thoracic cavities, the following appearances were seen: — The liver was very much enlarged, and descended low down into the iliac region; the left lobe was so firmly united to the right, that the gland appeared one solid mass, with a white band along that part where the lobes should have separated. The gall-bladder was much distended and full of bile, and the coats were of a dark-green colour. The stomach was compressed into a very small space by the enlargement of the liver and inflation of the great arch of the colon. The omentum was of a greenish hue, attached to the head of the colon, and wrapped close to the transverse arch. The small intestines were of a greenish tint, and flaccid. The right lobe of the lungs was firmly attached to the anterior pleura costalis and to the pericardium. The left lobe was collapsed and without adhesions. The heart seemed enlarged. — (See Plate XXXVII. fig. 1.) The small intestines and the stomach were removed, and the whole of the great gut exposed. The cæcum was much distended, the ascending colon slightly contracted, and the transverse portion dilated. At the commencement of the descending colon, at the left kidney, a small stricture was discovered; and the gut, from that to the sigmoid flexure, was contracted to the size of a tube about five lines in diameter, and its coats were much thickened. The sigmoid flexure was not altered in structure, but much inflated; and the whole of the rectum was also contracted to a very small size. The right lobe of the liver was of a bluish hue, and the upper convex part of a reddish purple. The left lobe was of a healthy brown colour, but the whole organ was softer and lighter than usual. The gall-bladder was distended with viscid bile of a dark-green colour, with all the ducts tinged. On making a section into the parenchyma of the liver, an unusually large quantity of blood was effused, and the white commissure was found to extend above six lines into its substance. The heart was softer and more flaccid than in a healthy state; there was more serum than usual in the pericardium;

but both the right auricle and ventricle were plugged up with a mass of yellow coagulated lymph, like fat. In the left ventricle there was something like venous blood, and a small portion of coagulated lymph filling the mouth of the aorta. The vessels of the dura mater were soft and tense. There was a depressed mark over the right frontal sinus, in capacity to admit a musket-ball, whence it is probable he had formerly received a wound. The vessels of the pia mater were very full of blood, and a quantity of serum was effused under the dura mater. About two ounces of bloody serum were also found in the ventricles; the choroid plexus was very much congested; and the whole of the medullary substance of the brain, when cut, was studded with points of blood: there was likewise a great quantity of serum about the cerebellum. On laying open the large gut, there was no material change, except that the strictured part was only a quarter of an inch broad; and some spots of inflammation appeared at the sigmoid flexure and rectum: a slight inflammatory appearance of the ilium, for the space of four or five feet, presented itself; the rest of the small intestines were healthy: the duodenum had some slight spots of inflammation.

CASE CCVIII. — *Chronic Dysentery. — Examination.*

JOHN FAGAN has been a considerable time in hospital, from acute dysentery, passing into the chronic form: is now apparently improving, and is gaining strength; has an appetite, but some irregularity of bowels still remains; the discharge is good; takes the bitter and aperient infusion every morning. — Cont. infus.

October 6th, 1814. — Was out yesterday evening in the night air, after which he was seized with a cold shivering fit, succeeded by a hot one and profuse perspiration; pains of the shoulders, particularly the right; bowels as usual. — Cont. infus.

7th. — Several yellow and orange-coloured stools; not much pain of shoulders; tongue moist, but foul; skin soft and warm; pulse 96. — R Mist. gum. Arabic. ℥vj.; mist. cretac. ℥viij.; tinct. opii, tinct. catechu, āā ℥ij. M.; a wine-glassful after each stool. Cont. mist. salin.

Evening. — Stools rather morbid; pulse 96; complains much of pain in both shoulders; tongue moist, not clean; skin soft. — A draught with tinct. opii, ℥xxx.; vin. antim. ℥xv.

8th. — Had six loose stools of a yellow colour, without pain; complains of pain in his shoulder; pulse 102; skin moist; tongue moist, but loaded. — Cont. mist. ut antea. Haust. cum tinct. calumb. ℥j.; tinct. opii, ℥xxx.

Evening.—Pulse 96; skin cooler and moist; tongue dry; three stools without pain.—Cont. mist. salin.

9th.—Stools frequent, thin and yellow, voided without straining or griping; is much weakened, and lower than usual; pulse 102; tongue moist, but chopped; skin soft.—A draught with tinct. calumb. and bitter mixture, ℥j. Cont. med.

Evening.—Stools are very frequent, and extremely morbid; pulse 108; tongue dry; has no pain.—Haust. anodyn. cum tinct. opii, ℥xxxv.; aquæ menth. pip. ℥jss. Enema anodyn. et mistura.

10th.—Seems very poorly; stools nearly as bad as ever, without griping or tenesmus; pulse 96; tongue dry and incrusted.—Repet. Haust. cum tinct. calumb. ℥j. Cont. mist. ut olim.

Evening.—Five stools; tongue moist, but brown; pulse 112; stools voided without pain.—Anodyne enema and draught. Mixture as usual.

11th.—Five very bad stools, with blood, but without any griping or straining; much weakened by them.—Calom. gr. vj.; pulv. antim., opii, āā gr. j. Cont. mist. et enema anodyn.

Evening.—Is sinking; stools are frequent, with clots of blood and mucus; debility and emaciation excessive; is perfectly sensible; no pain; tongue clean.—An anodyne and effervescing draught. Anodyne enema.

12th.—Has had an easy night, and slept pretty well; pulse frequent and weak; tongue yellow and moist; skin cool; stools better, frothy.—Repeat his draught, anodyne enema, and mixture.

Evening.—Emaciation and weakness are fast advancing; stools morbid; pulse 116, very feeble, and rather irregular; tongue chopped, but soft and moist; skin moist; countenance changed.—Cont. mist. Anodyne enema.

13th.—Stools with large clots of blood; is much reduced, and rapidly declining; eyes sunk; hands cold; pulse 116, fluttering; tongue dry and brown.—Cont. med.

Evening.—Much worse; no pulse; extremities cold. Died at ten o'clock, P.M.

Examination.—Upon opening the abdomen, the omentum was observed much diseased, having lost its natural transparency, and being very much thickened. In looking at the arch of the colon at the right side, two or three small holes were observed on its external coat, which communicated with its cavity; around these openings the coats had lost their tenacity, yielding to the least pressure. When opened, the gut, on its internal surface, presented a number of circumscribed ulcers, extending to the rectum, which was almost equally diseased. The liver seemed sound and healthy, but upon examining the left lobe, and running the hand on its concave side, a small

superficial abscess gave way, and discharged about four ounces of good pus. All other parts of the liver appeared healthy, and the other viscera were sound.

CASE CCIX.—*Chronic Diarrhœa, after acute Dysentery.*—*Examination.*

See Plates XXXVII. and XXXVIII. fig. 3.

DAVID COBB, ætat. 29, His Majesty's 69th regiment, of a robust habit, but strength much impaired by drunkenness and confinement in jail, was admitted into the General Hospital on the 27th of October, 1821, in a state of extreme inebriation. The symptoms were, during the commencement of his treatment, frequent purging of blood and mucus, attended with straining; no pain of his abdomen; tongue furred and excited; thirst urgent; appetite impaired; skin soft and cool; pulse 90 and soft; sleeps badly; evacuations scald him. Full doses of calomel with opium were given at bed-time, and a purgative draught in the morning, with the saline mixture through the day.

On the 1st of *November* the report was as follows:—Dysenteric symptoms are much relieved; stools feculent, copious, tenacious, and offensive; tongue slightly furred; no thirst; appetite not materially impaired; skin natural; pulse calm and firm; is troubled with hæmorrhoids.—The *haustus amarus cum sennâ* was given so as to act gently upon his bowels, and leeches were applied to the vicinity of the hæmorrhoidal tumours. The saline mixture and spoon-diet were continued.

3d.—Passed six or seven brown-coloured dejections since last evening, without straining; tongue cleaner; pulse good; skin cool and moist; complains of a burning sensation at the *scrobiculus cordis*.—*Appl. hirud. x. reg. epigast.*

Evening.—Has considerable pain about the rectum and anus, with some degree of prolapsus.—*Habeat enema anodyn.* *Fotus pro sede.* *Cras mane capiat ol. ricini, ʒij.*

After this report the stools became foul, offensive, occasionally bloody, and the urine was voided with much pain. Twenty grains of calomel were given at bed-time, with two grains of opium and two of ipecacuanha, and emollient and anodyne injections were thrown up twice or thrice daily. The saline mixture with *tinct. opii* and *spirit. æther. nitros.* was also given every three hours. His mouth became sore on the 8th, but this was not followed by relief; on the contrary, the stools became still more morbid and sanguineous.

On the 12th, small sloughs were passed in the evacuations, which were frequent, foul, offensive, and bloody. The volatile liniment which had been applied over the abdomen was continued, and followed by hot poultices. Anodyne, saline, and emol-

lient remedies were prescribed with purgatives, so as to carry off the morbid secretions; and his strength supported by farinaceous nourishment, and a small quantity of wine. A flannel bandage was applied around his abdomen and loins.

On the 14th he passed more sloughs, and these of a larger size, with several scybala; and on the following day (15th) the report was:—Purging less frequent; stools feculent, dark-coloured, intermixed with a small quantity of blood and mucus, and passed without straining; urine voided without pain; neither fulness nor pain in the abdomen; pulse 85, soft and regular; skin pretty natural; tongue white and furred; complains of much thirst; countenance improved since yesterday. — Cont. mist. salin. secundâ quâque horâ. Etiam haust. anodyn. h. s. et haust. aperiens primo mane. Cont. diæta. R Decoct. cinchon. ℥jv.; opii puri, gr. ij. M. et ft. enema tepidum bis quotidie injiciendum. The symptoms and treatment were but little varied until the 23d, when he began to improve. The wine was increased to four ounces daily, and a little chicken was allowed him in his soup. On the 29th he had so far improved in every respect that he was considered as being convalescent; but on the 1st of December the stools became more offensive and morbid, and attended with some griping. A purgative was exhibited, which gave him relief; but the tongue still remained white and furred, the alvine evacuations were more or less disordered, and the pain and burning sensation returned in the epigastrium. Ten leeches and a large blister were applied to the epigastrium and abdomen, and the nitric acid drink directed. The blister continued open for several days, and discharged freely; but little relief was obtained from it, and the acid drink was discontinued after a few days.

On *December* 16th, his stools betrayed a deficiency of bile. Ten grains of calomel with one of opium were given at bed-time; saline medicines and gentle aperients were exhibited; and farinaceous nourishment, with a small quantity of wine, allowed.

22d. — Stools feculent, rather offensive, and somewhat light-coloured; tongue furred, but moist; free from pain; sleeps pretty well; appetite good. — Cont. vin. ℥jv. R Mist. amar. cum sennâ, ℥ij.; tinct. ferri muriat. ℥x. M.; bis die. He improved until the 26th, when the following report was given:—Purged frequently since last night; stools feculent, and rather dark-coloured; no straining nor pain of the abdomen; tongue pretty clean; pulse good; skin cool and moist. — R Confect. aromat. ℥j.; decoct. cinchon. ℥jss.; mist. camph. ℥ss.; tinct. lavend. ℥ss. M. ft. haust. ter die sumend. Omit. alia.

January 4th. — Frequent stools since last evening, feculent, clay-coloured, and very offensive; complains of flatus in his stomach, with a sense of heat and acidity. — R Magnes. alb. ℥j.; aquæ menth. ℥ij. Ft. haust.

Evening. — Stools feculent, nearly white, and extremely offensive; says he feels better. — R Calom. cum extract. colocynth. āā gr. x.; antim. tart. gr. $\frac{1}{4}$; ol. anisi, q. s. Ft. pilul. ij. h. s. s.

5th. — Dejections white and green intermixed, very offensive, feculent, and copious; tongue furred, rather excited, and somewhat dry; the burning sensation complained of yesterday relieved; pulse firm, calm, intermittent; skin warm and moist; very thirsty; appetite impaired; countenance anxious. — Sumat mist. amar. cum sennâ, \mathfrak{z} ij.; magnes. sulph. \mathfrak{z} ss.; ol. menth. \mathfrak{m} ij. M. stat. Arrow-root and wine twice a day, and soup for his dinner.

Evening. — Dejections copious, feculent, less offensive, and more natural in appearance; tongue cleaner; says he feels easier. — Repet. pilul. ij. h. s. s. cum haust. ut infrâ præ. R Mist. amar. cum sennâ, \mathfrak{z} ij.; sodæ carbon. gr. x. h. s. s.

10th. — Stools of a yellow colour, feculent, with a quantity of mucus at the bottom of the vessel; tongue still reddish and furred; countenance much improved; free from pain. — Cont. med.

11th. — Dejections more natural; says he feels better, but weak; tongue cleaner, but still furred; pulse 74, somewhat irregular; skin natural. — Cont. pilul. aloët. cum calom. ter die, et haust. amar. cum sennâ bis die. Cont. vinum et diæta.

12th. — Pulse 80, regular this morning; skin cool and moist; tongue looks much better, and his countenance is improving. — Cont. med. et vinum.

16th. — Four brown-coloured, feculent stools passed easily; tongue moist and pretty clean; says he feels very comfortable. — Cont. med.

Vespere. — Purged somewhat freely; dejections loose, but of a natural colour; tongue clean; skin cool. — Cont. pilul. bis die, et haust. horâ somni.

19th. — Pretty easy; three or four stools since last report, loose, but pretty natural in colour; tongue clean and moist. — R Decoct. cinchon. \mathfrak{z} jss.; tinct. ejusd. \mathfrak{z} ij.; acid. sulph. dilut. \mathfrak{m} xv. M. ft. haust. ter die. Cont. vin. Omit. alia.

After this report he continued to sink gradually, and died on the 10th February.

Examination. — The liver was considerably enlarged, but not sensibly altered in structure. The stomach was much distended with flatus, as were also the small intestines. The cæcum was contracted, and divided from the commencement of the colon by a stricture resembling that produced by a ligature. The right part of the tranverse arch of the colon was much distended. The left and sigmoid flexures of this bowel were constricted in three places, as if from the application of ligatures, and the rectum was contracted throughout (see Plate XXXVII. fig. 3). The ilium at its entrance into the cæcum was surrounded by a cluster of enlarged glands. This

intestine was distended by flatus, and internally it presented slight appearances of inflammation and ulceration. The colon was opened from the ilium to the anus. The cæcum was, internally, very deeply inflamed, and of a deep red colour. It presented a very large ulcerated surface, with a greenish-yellow slough in the centre. The ascending colon was very red, and contained several large ulcers. The right arch was also deeply inflamed, and contained a congeries of small ulcers closely studded together. The transverse arch passed suddenly from a red to a pale yellowish green colour, and was also ulcerated, the ulcers being small, few, and distinct. The left angle of the colon, descending portion, and sigmoid flexure, especially in the seat of the strictures, were of a deep red, ulcerated, excoriated, and presented large abrasions of the mucous surface. The same appearances were equally remarkable in the rectum, particularly the abrasions. (See Plate XXXVIII.)

CASE CCX. — *Chronic Dysentery after the acute and uncomplicated Disease.*
Examination.

J. DOVE died on the 13th August, 1815. He was attacked with dysentery in the beginning of June. The symptoms from the commencement were violent. He was in the twentieth year of his age, a stout young man. The pain about the umbilicus was the most troublesome symptom; his stools were generally of a green slimy appearance, and at times, when there was very much straining, mixed with blood; pulse 100, soft and full; skin moist; he was first treated by castor oil, calomel, and by a blister over the abdomen; mercurial ointment was rubbed in liberally, and emollient injections were thrown up; the mouth was affected in four days; the purging and griping returned at intervals, generally in the night, but were always relieved by a laxative; the laxative oftenest used was five or six drachms of neutral salts; they relieved him more than the oil. At one time he appeared to have been convalescent, though he was weak, and decoction of bark was given for a day or two, but purging commenced again. For eight or ten days previous to his death, mercurials were disused, and he took mucilaginous substances with laudanum by the mouth, and enemata; at intervals, laxatives were prescribed, but when given in the morning, they would not perhaps have any effect till midnight, when of a sudden there would be a very copious evacuation. Several instances of this kind have occurred to us in chronic cases, where there seemed to have been considerable disease of the colon. We were particularly anxious to inspect the intestines of this man, and the appearances were, — the greater part of the bowels were in the left side of the abdomen; the omentum contained very little fat; the stomach

contained five or six ounces of bile, but was free from lesion; there was no disease of the small intestines. The morbid appearances commenced at the caput coli, which was very much thickened; from this to its termination in the rectum, the colon adhered to all the surrounding parts. Viewing the colon *in situ*, its appearance was rough and unequal, and to the feel hard and lumpy in those parts that were thickened. Among the first things that attracted notice on viewing the colon were numerous ulcerated spots, or rather holes. Between what are called the cells of the colon there was a complete destruction of substance, and round the ulcerated holes there was generally great thickening of the gut. The colon was removed from the body, and examined leisurely. The following were the appearances, which were evidently the consequences of inflammation in its various grades and stages:—there was much thickening of the bowel, and where this was greatest there was also diminution of the natural passage, so that it scarcely admitted the fore-finger; a sort of fleshy substance formed the stricture; there were also abrasions of the villous coat, some of them the size of a crown-piece. The mucous coat was readily separated from the adjacent texture. At one place it was almost entirely detached, adhering only by a filament. Upon removing several of them, and examining them minutely, there could not be a doubt of their being a part of the villous coat; they could be spread out to the size of the part from which they seemed to have been detached. There were many ulcers, several of which had penetrated half-way through the gut, though at these parts it was generally very much thickened, and the passage diminished in size. The villous coat exhibited appearances of inflammation where the gut was not thickened; on its surface there was much bloody-looking matter, which seemed to be an exudation from the debilitated capillaries; there were five or six holes in the colon, and one in the rectum. The transverse part of the colon seemed to have suffered least; the liver was perfectly sound; there were numerous adhesions in the thorax.

Remarks.—This case was communicated to us by Dr. Badenoch, whom we have formerly had occasion to mention as a most able and experienced physician. We have preferred the insertion of it to any case we could adduce in corroboration of the account we have given of the lesions characterising the last stages of dysentery.

SECTION VII.

Of the Treatment of Chronic Dysentery and Chronic Diarrhœa.

WHEN the dysenteric symptoms continuing after an acute attack of the disease consist chiefly of an increased frequency of evacuation, without straining or tormina, the appetite, pulse, and strength, improving or remaining unimpaired, medicines possessed of an astringent effect should not be employed. The evacuations ought to be viewed, in such cases, as being the mode which nature adopts of bringing about a resolution of the inflamed and tumefied state of the mucous surface, constituting an essential part of the dysenteric disease; the increased secretion and exhalation giving rise to this form of diarrhœa, emptying the engorged vessels, and removing the tumefaction of the diseased viscera.

It will be frequently remarked, that the diarrhœa which continues for a time after dysentery is accompanied by an evidently salutary effect, in the increasing strength and flesh of the patient. When the diarrhœa is thus salutary, the evacuations, although frequent, are generally not materially diseased: they are usually of a good colour, feculent, and fluid, and voided without griping or tenesmus.

When the motions are morbid, or attended with abdominal soreness, sense of heat, griping, tormina, tenesmus; if they be slimy, or at times sanguineous, and the patient complains much of thirst and of fever, with restlessness at night,—the disease evidently possesses a character which must be removed by art, and which nature is generally incapable of counteracting, especially after an acute attack of disease. In cases of this description, the remains of inflammatory action should be dreaded as existing in complication with a morbid condition of the secretions; and judicious means should be resorted to, in order to remove both these states. Here local vascular depletions are

necessary, especially if the patient have not been depleted early in the disease. If his strength has been lowered too far to admit of this measure, the employment of blisters to the abdomen, followed by a succession of hot poultices, and these by a thick flannel bandage, the warm bath, and stimulating frictions upon the abdomen and lower limbs, will often prove serviceable.

The propriety of changing the morbid secretions in this form of the disorder is obvious, particularly if accompanied by disease of the liver. With this view we have generally continued to exhibit full doses of calomel with opium at bed-time, giving a gentle cooling purgative in the morning, and either resorting to camphorated mercurial frictions on the hypochondrium, or exhibiting the blue-pill with ipecacuanha, or Dover's powder, internally. If these means fail of improving the secretions, the character of the stools, and the attendant symptoms, after sufficient time has been given them to produce these effects, other means should be resorted to. But, while the above remedies are being employed, injections of emollient and anodyne substances into the colon should be practised, with the view of soothing the morbidly increased action of this viscus, of protecting its excoriated and irritable surface from the action of the morbid secretions, and of diluting them, and thereby rendering them less irritating to the tender surfaces along which they are about to pass.

After the employment of mercurials, the nitric acid with opium deserves a trial; and whilst it is being exhibited internally, the nitro-muriatic acid solution should be applied, in any of the modes already recommended, to the hypochondria or abdomen. The adoption of the above measures will not stand in the way of an alterative dose of some mild mercurial preparation given at bed-time, and a gentle purgative in the morning; whilst enemata, consisting either of the infusion of ipecacuanha, or of the decoctum lini with mucilage, should be thrown up twice or thrice daily.

In the latter stages of chronic dysentery, especially when much debility is complained of, the infusion of cinchona, or of cinchona and rhubarb with tinctura opii, will often prove of much benefit. If the debility be urgent,

and especially if symptoms of ulceration of the large bowel be present, without tormina, or pain upon firm pressure of the abdomen, the infusions or decoctions of the cinchona or rhubarb will be advantageously prepared, for the purposes of injection, by adding to these substances, previous to their infusion, a small proportion of ginger, or of any of the warm spices. Infusions of catechu may be also used, under similar circumstances to the above, in the form of injection, with advantage, and may be combined with the warm spices. In the chronic dysentery of the natives of India, and of those Europeans who have resided long in the country, the above tonic and stimulating injections should not be overlooked.

When chronic dysentery or diarrhœa is evidently the result of relaxation of the vessels of the internal surface of the bowels, and, like a gleety discharge, proceeds from a protracted habit of increased secretion, then the use of the above means, and of gentle tonics and astringents combined with anodynes and mucilaginous substances, exhibited both by the mouth and in the form of injection, is particularly necessary. The same directions for the administration of enemata which were given when treating of the acute disease, are applicable in chronic dysentery or in chronic diarrhœa.

If the evacuations be accompanied with, or preceded by, pain, tenesmus, and a recurrence of the bloody discharge and mucus, the retention of morbid secretions and fæcal matters ought to be dreaded. When the patient has preserved some degree of appetite during the more acute period of the disorder,—or whether this may have been the case or not,—if purgatives have not been judiciously resorted to, or have been omitted for some time, which is often the case from fear of debility, fæcal accumulations will have formed in the cæcum and colon, which require to be removed. Here the exhibition of purgatives of a mild and cooling nature, both by the mouth and *per anum*, are indispensably requisite; after which, diaphoretics, injections of the infusion of ipecacuanha and of emollient substances, with a bland, farinaceous diet, will be beneficial.

Chronic disorder, either in the form of slight dysentery or diarrhœa, not

infrequently supervenes to the acute disease, in consequence of incautious exposure to the night-air, to atmospherical vicissitudes, to errors of diet and regimen, and to the want of comfortable beds and clothing. When this is remarked, the state of the patient should be carefully inquired into, and if any one symptom indicating the presence of inflammatory action of the colon be present, and the strength of the patient permit, local depletion, followed by the discipline so frequently recommended, should be put in practice; and purgatives, diaphoretics, diuretics, and emollients, afterwards exhibited. The food of the patient, at the same time, must be bland and mucilaginous; and if the powers of life appear to sink, gentle tonics, combined with absorbents, mucilages, and opiates, must be resorted to.

It should always be kept in recollection, that the necessary employment of tonics, astringents, or anodynes, in chronic dysentery, when the powers of life are much exhausted, often occasions a slight accumulation of faecal matters in the large bowels, and requires the occasional exhibition of a purgative medicine. Under these circumstances, a dose of the oleum ricini, or the bitter aperient mixture, or rhubarb, or the compound jalap powder, will be most advantageous, and may be followed, in two or three hours, by an emollient injection.

When diarrhoea continues after dysentery for a longer time than is necessary to the resolution of the inflammatory state of the large bowels, and restoration to their healthy functions, the patient gaining neither strength nor flesh, it evidently requires to be restrained. This continuance of morbid action may be owing to improper diet and regimen during convalescence, or to an imperfect conversion of the chyme into chyle, a large proportion of the alimentary matters entering into combinations to which their chemical properties dispose them, under the states of moisture and increased temperature in which they are placed. This effect upon the alimentary matters may proceed from the debilitated state of the digestive organs, or from this state associated with a morbid or deficient secretion of bile. If this be the case, as it undoubtedly often is, the use of gentle tonics, in order to restore the powers of digestion, alternated or combined with antacids, as magnesia or

ammonia, or the cretaceous preparations, in order to neutralise acidity in the *prima via*, is obviously necessary; and, with the view of improving the secretions, the milder mercurial preparations should be given, combined with the carbonates of the alkalies, whilst the nitro-muriatic solution may be employed externally.

While this plan is being practised, the occasional exhibition of a purgative, to carry off morbid secretions, and prevent fæcal accumulations, will be necessary; and for this purpose, no medicine can be more beneficial than the infusion of gentian or senna, either given alone or in conjunction with any of the neutral salts, as circumstances may suggest. At the same time, emollient, mucilaginous, anodyne, or even tonic enemata may be thrown up, according to the state of the patient, and the particular symptoms by which the case may be characterised.

In those chronic cases which have been denominated "*white flux*," from the muco-purulent and gleety appearance of the discharge, the muciparous glands of the large bowels are generally in a state of disease, and require the use of gentle tonics, combined with astringents, and alternated with purgatives and mercurial preparations. In the majority of these cases, the bile is either entirely obstructed, or it is secreted in insufficient quantity and quality. In order to restore the biliary secretion, and at the same time give energy to the relaxed mucous surface of the colon, we have generally exhibited full doses of calomel at bed-time, with opium, and given the bitter aperient mixture in the morning, with advantage. Occasionally, we have also prescribed with benefit a pill composed of aloes, calomel, and ipecacuanha, and directed an infusion of cinchona, rhubarb, and ginger, to be employed in the form of enema; or infusions of catechu, simarouba, columba, cinnamon, &c. in the same manner.

Whenever astringent tonics are prescribed in the more chronic cases of dysentery and diarrhœa, their effects should be carefully watched. They ought never to be ventured upon when pain of the abdomen and other symptoms of inflammatory action of the colon are present; and when pre-

scribed in cases accompanied with great prostration of strength, the sudden arrest of the discharges, and consequent retention of morbid secretions, ought to be guarded against. This is best accomplished by the occasional exhibition of a purgative, or by the injection of an aperient enema.

When the affection of the bowels seems to be symptomatic of disease of the liver, or occasioned by inflammatory action, of a chronic kind, existing in the substance of that organ, and giving rise to a vitiated condition of the bile, our remedies should be chiefly directed to this seat. In cases of this kind, it will be often difficult to ascertain whether the liver be affected or not. But if the patient complains of weight, tightness, or oppression about the right hypochondrium and ensiform cartilage, with cough, pearly state of the eye, and morbid condition of the evacuations, such as we have already described, and, in short, with any of the symptoms which we have insisted upon when treating of chronic affections of the liver,* local depletions, mercurials, purgatives, nitric acid, and the nitro-muriatic solution, must be successively resorted to, according to the particular circumstances of the case, and the treatment previously employed. In all cases of this description, the plan of cure differs but little from that which we have discussed when the treatment of chronic hepatitis was before us.† In addition to the above means, external irritation may be tried, either by means of the common blister, kept discharging for some time, or by a seton inserted below the small ribs of the right side. The tartarised antimonial ointment may also be rubbed in, so as to bring out a copious crop of pustules; and in some cases it may be combined with a third part of mercurial ointment and a few grains of camphor.

In many instances of complicated chronic dysentery, as well as in its simple form, the *warm bath*, followed by very energetic frictions of the lower extremities, and more gentle frictions of the abdomen, either with a coarse towel, or with some acrid and stimulating liniment, have proved of essential service. After they have been used, the abdomen and loins should be well

* See Vol. I. p. 469 *et seq.*

† See Vol. I. p. 625 *et seq.*

bandaged, and a diaphoretic medicine exhibited. In both these forms of chronic dysentery the *nitro-muriatic solution* is generally beneficial. It has been chiefly in the more obstinate cases that we have proved its efficacy, as we have usually premised other means of cure more calculated to evince their effects in a short time, and deferred this and other remedies of a slower operation until it was found necessary to resort to them. The nitro-muriatic solution may be used in the form of bath, in that of poultices, or in simple ablution or sponging, as pointed out in the First Volume.* Whilst the nitro-muriatic solution is being employed externally, small and repeated doses of blue-pill with ipecacuanha and opium, or any mild mercurial with Dover's powder, may be exhibited; and if the bowels at any time should not be sufficiently free, so as to lead the practitioner to fear the accumulation of faecal matters and morbid secretions in the cæcum and cells of the colon, a full dose of some purgative should be prescribed, and repeated from time to time. In such chronic cases as are complicated with a morbid secretion of bile, or some structural change of the liver, the above alterative mode of treatment is more especially required; and, in addition to it, a full dose of calomel should be given at bed-time, and followed early in the morning by a dose of the bitter aperient mixture, or the compound jalap powder.

If the affection of the bowels be kept up, from relaxation of the mucous surface and vessels supplying it, and a deficient or entirely obstructed flow of bile, in addition to the above means, tonic injections should be thrown into the colon; and if the external use of mercurials has not been resorted to, the mercurial ointment with camphor may be rubbed upon the hypochondrium, or laid on the surface of warm poultices. After this mode of rousing the energies of the liver has been tried, a blister may be applied over the region of this viscus; and after it has healed, the mercurial ointment may again be applied as before, or a plaster composed of the *emplastrum ammoniaci cum hydrargyro*, and the *emplastrum Galbani compositum*, or the *emplastrum picis compositum*, may be placed upon the right hypochondrium and epigastric region.

* See p. 628.

When the bile is secreted either in deficient quantity or quality, acidity of the contents of the *prima via* should always be dreaded, and more especially if the stools be pale, frothy, yeasty, or seemingly fermented. In these circumstances, a combination of the sub-carbonates of the alkalies, or magnesia, with alterative doses of mercurials, and with the gentler tonics, may be tried; whilst the external means of cure above stated should be put in practice. The cretaceous mixture may also be given occasionally, and be made the vehicle for other remedies which the circumstances of the case may suggest, as small doses of rhubarb, of the *vinum ipecacuanhæ*, or of *columba*.

In cases of this nature, one grain of calomel with half a grain of ipecacuanha, given every two hours, is often extremely serviceable. Or, instead of this, one or two grains of calomel with four of Dover's powder may be taken every three hours; and we have often prescribed two grains of calomel, with one of ipecacuanha and half a grain of opium, every third hour, with much benefit in more obstinate cases. Whilst the calomel acts, in this combination, upon the secretions generally, especially those of the liver, the ipecacuanha and opium restrain the increased discharge from the mucous surface of the bowels, and determine the circulation to the external surface of the body.

The observations which we offered, when treating of the more acute forms of dysentery, on the employment of emollients, camphor and opium, bark in conjunction with rhubarb, infusions of ipecacuanha, and mucilages, with lime-water, &c. are applicable in many cases of the chronic diarrhœa, especially those which are consequent upon the acute disease, and in which vascular depletions and purgatives have been judiciously directed. As respects also the treatment of those local symptoms which are most frequently met with in the acute dysentery, the same remedies may be resorted to when they supervene in the chronic disease, as were recommended when the removal of these symptoms was the subject of discussion.

In some of the more chronic cases, especially when tenesmus or *prolapsus*

ani are present, the injection of small enemata, consisting of one part of vinegar to three or four of cold water, has often proved of service. Occasionally, we have added to this, with increased advantage, four or five grains of the superacetate of lead, with a few drops of laudanum. Care should, however, be taken not to repeat these injections more frequently, nor to continue them longer, than is necessary to a fair trial of their effects; and if the bowels should become too much or too quickly restrained by them, a purgative draught should be given, and repeated according to circumstances. Instead of the superacetate of lead, we have found much benefit from small injections of a weak solution of the sulphate of zinc; and we have given this salt in doses of about half a grain, by the mouth, in conjunction with ipecacuanha and myrrh, with decided service in similar cases. These medicines, especially the sulphate of zinc, may be combined with mucilages and anodynes, and exhibited either in the form of injection or in that of a draught or mixture.

In similar circumstances to the above, namely, in the more chronic cases of diarrhoea accompanied with great prostration of strength, and occurring after active disease, the preparations of iron, especially the sulphate of iron, or the tinctura ferri muriatis, will generally be given with the greatest advantage. We have often combined the sulphate of iron with either the sulphate of soda, or the sulphate of potash, or of magnesia, when we were desirous of carrying away the secretions and fæcal accumulations formed in the bowels, at the same time that we wished to produce a tonic and astringent effect upon the digestive mucous surface and follicular ducts of the intestinal canal.

Strictures of the colon have been insisted upon by us as being a frequent consequence of repeated attacks of dysentery and of the chronic forms of the disease and of diarrhoea. The history of several cases which have been detailed, as well as several of the drawings illustrating the present Volume, fully confirm our position. It is obviously difficult, however, to ascertain the existence of this lesion during the life of the patient; for in the majority of instances in which we have found them, the rectum has been of its usual

diameter, and they have generally been situated too high to be reached by a rectum bougie. Even under ordinary circumstances, we consider it impracticable to introduce the bougie into any part of the sigmoid flexure of the colon; but during a state of disease characterised by inflammatory action of the mucous surface of this bowel, frequently with ulceration, always with great irritability of its muscular tunics, and sometimes with softening of its structure, attempts to pass the bougie beyond the rectum would generally be impossible, and always dangerous, from the facility with which the bowel may be injured by such attempts.

Mechanical means of ascertaining the existence of stricture of the colon being entirely out of the question, we are obliged, therefore, to depend solely upon such inferences as may be drawn from the phenomena characterising the affection. If there be a great difficulty or utter impossibility of procuring full and feculent evacuations, the patient not labouring under tenesmus or the acute symptoms of dysentery; if the motions be scanty, fluid, and containing semi-dissolved or broken-down fæces; if they be preceded by an uneasy sensation in the course of the colon, with distension, fulness, and sense of load about the cæcum and right hypochondrium, or between the epigastric region and the umbilicus; if there be considerable tumidity of the abdomen, with flatulent eructations and a foul and feculent odour of the breath; if an injection of any considerable bulk cannot be thrown fully into the bowel, or if it returns immediately, or if the last part of it injected forces back the rest around the pipe of the syringe, notwithstanding it is fully introduced and closely applied to the anus; and more especially if these symptoms supervene to previous attacks of dysentery and diarrhoea, or after a protracted attack of these diseases,—we should then dread the presence of stricture of the colon, particularly in the left and sigmoid flexures, although we cannot be certain of its actual existence. The accumulation of hardened fæces, or even of a large gall-stone in this part of the intestinal canal, may occasion all the above signs; but when such accumulations form in this situation, a careful examination of the abdomen will often detect them, particularly in lean subjects, and thus assist in unravelling the real nature of the disorder.

In all cases of chronic disease characterised by irregularity of the bowels, scanty, fluid, and dark-coloured evacuations, with an impossibility of procuring full and copious motions by the assistance of purgatives, and occurring after frequent attacks of acute dysentery or long-continued diarrhœa, contractions of some part of the colon should be suspected, the abdomen and evacuations of the patient carefully and daily examined, and his sensations previous to, or during, the passage of a stool attentively inquired after. We have often heard the patient complain, in cases which seemed to us to have been decidedly stricture of the colon, of a sense of tearing, scraping, or of gnawing, in some part of the course of the colon, previous to the acting of an aperient medicine upon the bowels; the abdomen, especially about the cæcum and the ascending and transverse colon, being hard and tumefied, and the stools fluid, dark-coloured, with broken-down or semi-dissolved fæces, and with shreds of white mucus or albuminous exudations.

In cases of this nature, the chief object of the practitioner is to preserve the contents of the large bowels in a fluid state, in order to prevent accumulations of fæcal matters from forming above the stricture, and the irritation which indurated substances would occasion. But we should not altogether content ourselves with the fulfilment of this indication; for, as it has been shewn in the cases already detailed, and in several of the Engravings, that the strictured part of the bowel is generally in a state of chronic inflammation or ulceration, particularly its mucous surface, we should therefore conjoin with the frequent employment of cooling laxatives, the exhibition of mucilaginous, refrigerant, and anodyne remedies, and the administration of emollient and soothing injections, which should be thrown up gently, by means of the improved apparatus lately introduced into practice. Gentle friction, employed twice daily over the abdomen, is also extremely serviceable in cases of this nature, especially when it follows the exhibition of a cooling laxative or of an emollient enema.

In respect of the particular remedies which we have been led to prefer in cases of the presumed existence of stricture of the colon, we shall offer

but a few remarks. Amongst those which excite the actions of the alimentary canal, the most gentle in their operation, and the most cooling as respects their general effects, should be selected. Manna, magnesia, tartrate of potash, the soda tartarizata, castor oil, supertartrate of potash with sulphur and confection of senna, tamarinds, and the mildest preparations of mercury, may be employed, combined with such other remedies as the circumstances of the case may suggest. We have always considered that aloetic purgatives have a better effect in softening and rendering the *fæces* more fluid than any other medicine, though we fear that they may prove too irritating to the rectum in cases of this description. Saline purgatives, especially the sulphates, when given alone, occasion watery motions, without removing hardened *fæces*, and exhaust sooner the strength of the patient. In this disease, whilst we endeavour to procure fluid, feculent evacuations, watery discharges should be avoided. More decided advantage will often be obtained from the above mild aperients than from the more active cathartics, which are frequently prescribed. The same remark applies also to the use of aperient enemata. We have often succeeded better with the common soap injection, or the decoctum lini with a little castor or olive oil, than with injections of a more purgative kind. The gentler means soothe the frequently attendant irritation of the large bowels, solicit their natural actions, and dissolve the tenacious or hardened matters above the seat of stricture; whilst active cathartics excite the raw and inflamed surface of the constricted part, and increase the morbid state which it is our object to remove.

It will often prove extremely serviceable to combine an anodyne or antispasmodic medicine with the aperients given by the mouth or thrown into the colon, more especially when we have reason to infer that the stricture, supposing it actually to exist, is not of long duration. When describing the appearances which stricture of the colon usually exhibit upon examination after death, we stated our belief that this lesion was often owing to spasm in the first instance, produced by the inflamed and irritated mucous surface, and that the spasmodic contraction probably became permanent, owing to its continuance and the extension of the inflammatory action to the more external coats and structure of the strictured

part. If this be actually the case, and we have no reason to doubt it, viewing it both physiologically and pathologically, the propriety of combining anodyne and antispasmodic remedies with laxatives cannot be questioned in theory, and, as far as our experience has instructed us, their efficacy as auxiliaries cannot be doubted in practice. Of these particular kinds of remedies, we have been in the habit of preferring ipecacuanha in the form of powder or infusion, given by the mouth, or as an enema, frequently in combination with the sub-carbonate of soda, or the soap pill, and the extract of hyoscyamus. We have also conceived that advantage has been obtained from the use of camphor, in conjunction with ipecacuanha and some one of the cooling aperients enumerated above: it may likewise be administered in emollient and mucilaginous injections. In some of the more obstinate cases we have tried the effects of injecting tobacco-smoke *per anum*, and occasionally it has proved decidedly beneficial.*

In addition to the above means, the nitro-muriatic solution may be employed externally, and it may be alternated with the use of the linimentum hydrargyri, the linimentum camphoræ compositum, or the linimentum saponis cum opio, rubbed assiduously over the abdomen; or those three liniments may be combined and used for the same purpose, and in the same manner.

When strictures take place in the rectum in consequence of repeated attacks of dysentery and diarrhœa, considerable relief may be procured from the use of bougies. We think, however, that they are often very injurious, from being precipitately and officiously employed. As in strictures of the colon, so in similar lesions of the rectum, the mucous surface is generally in an inflamed or ulcerated state; and the stricture frequently is at first the consequence of spasmodic action of the circular fibres of the

* We have often found tobacco-smoke injected *per anum* extremely serviceable in obstinate constipation; and we think it might be of advantage in intus-susceptions, by inflating the gut, and removing spasm. When spasm of portions of the intestines, particularly of the large bowel, is occasioned by the irritation of hardened fæces, we think that tobacco-smoke would be useful. It at least deserves trial.

bowel, proceeding from the diseased state of the internal surface. Attempts to remove the disease by mechanical means, without a judicious exhibition of suitable remedies previously, without having resorted to an appropriate and strictly medical treatment, must necessarily be followed by hurtful effects. In cases of this nature, a fluid state of the contents of the large bowels, short of purging, should be preserved by means of cooling aperients. All febrile excitement of the system generally ought to be guarded against, by directing an antiphlogistic diet and regimen for the patient; and if local irritation or febrile action supervene, it should be immediately removed. Emollient, diluent, mucilaginous, and soothing injections ought to be frequently thrown up, with the view of diluting and rendering less acrid the faecal matters which have to pass through the strictured bowel, and of protecting the diseased surface from being irritated by them. And as nothing tends more to perpetuate irritation and disease of the rectum than a morbid condition of the biliary and intestinal secretions, they should be restored to a healthy state, when disordered, and preserved in it, by suitable means. If these remedies fail, then the bougie may be resorted to; but it should neither be confided in alone, nor be used so as to injure the diseased part: it is best employed as an addition to the means just recommended, which ought to be persisted in as long as it may be necessary to introduce a bougie, and indeed for some time afterwards. Whatever plan of cure we may adopt of a local or mechanical kind, should be directed with the recollection that the seat of disease is much more tender as to its organisation, and more liable to be injured by rude interference, especially in warm climates, than structures which are healthy.

Amongst the natives of India, the treatment of chronic dysentery and chronic diarrhoea should always partake more or less of a tonic and stimulating character; for although the use of laxatives or purgatives, with attention to the biliary secretions, is requisite, the relaxed state of the mucous surface of the digestive canal, and the low or adynamic condition of the frame generally, which dysenteric disorder rapidly induces amongst them, when not met by judicious treatment at its commencement, imperatively require the use of tonics, astringents, and stimulants, combined so as to impart tone and

energy to the intestinal tube, and to restrain inordinate and exhausting discharges. Whilst, however, we find it necessary to resort to the exhibition of remedies possessed of these properties, care should be taken not to produce any degree of constipation: for if the morbid and acrid secretions be retained but for a short time in the cæcum or colon, ulceration of an atonic character will readily supervene; and in the native constitution, such a termination takes place rapidly, and without the previous appearance of any acute symptom which may warn the practitioner of the likelihood of its approach. At the same time, therefore, that tonics, astringents, and stimulants, are being exhibited, laxatives should either be combined with them, or given at intervals, according to the particular circumstances of individual cases.

In natives, as well as in Europeans, purgatives ought never to be laid aside whilst we have reason to suppose, from the symptoms present, the condition of the stools, and the state of the abdomen, that fæcal accumulations and morbid secretions still remain in the *prima via*; but the employment of cardiac and restorative remedies should not be relinquished, or even interrupted, by the use of purgatives: both classes of remedies are equally necessary, and quite compatible as respects their operation.

With the natives, rhubarb combined with cinchona, ginger, and small doses of sulphate of iron, is particularly serviceable in either the chronic diarrhœa or chronic dysentery. The sulphate of iron may be also exhibited, with the requisite quantity of sulphate of soda or sulphate of magnesia, either in the infusion of quassia, or in some aromatic water. When thus prescribed, any of the hot spices should be combined with the iron as a corrigent.

Calumba, catechu, the betel-nut used as formerly noticed, lime water pomegranate bark, serpentaria, kino, cascarilla, simarouba, sulphate of zinc, cayenne pepper, cinnamon, ginger, the black and white pepper, cloves, &c., have been also employed by us with great advantage, either combined with one another, or with aperients, tonics, mucilaginous substances, or with anodynes, and given either by the mouth or by injections, or in both ways,

and may be administered twice or thrice daily, or according to the circumstances of the case.

During the treatment of chronic dysentery and chronic diarrhœa, the *diet* and *regimen* of the patient ought to receive the strictest attention; and such attention should not be limited to the time he remains under medical treatment, but be extended to the period of convalescence, and even for some time afterwards. In many instances we have found the disease remarkably prolonged by much eating, and by partaking of improper articles of food. The diet, even the individual articles constituting it, should be carefully assigned by the physician, and ought to consist entirely of mucilaginous and farinaceous substances. Soups often agree well with the patient when they are sought after by him; but they sometimes occasion acidity. When this is observed, they should be omitted: a similar remark is applicable to milk. Whatever the patient takes a fancy for and relishes, seldom is hurtful, and therefore ought not to be refused, unless it is obviously of a most hurtful tendency.

The quantity, as well as the quality, of the food should be an object of attention. Eating more than is requisite for the support of the energies of the system often prolongs the disease; whilst, on the other hand, too low a regimen is apt to lower too far the powers of life, and diminish the resistance offered by nature to the inroads of the malady. While active disease or inflammatory action is proceeding in the colon, nothing beyond the lightest farinaceous or mucilaginous food should be ventured upon; and the patient's beverage may consist either of the weak nitric acid drink, or of imperial or tamarind water. Wine ought not to be exhibited, unless the powers of life require to be rallied. We have seen the too early permission to take a single glass of wine bring back the acute symptoms, and have often witnessed the chronic forms of the disease converted into the acute by such imprudence. When, however, the energies of the system are lowered so far as to prevent the employment of the requisite means of procuring evacuations from the bowels without the assistance of a cordial; when the disease assumes an adynamic character, or a disposition to a solution

of the diseased textures, — wine, in a state of dilution, or in the farinaceous food of the patient, may be given; but in many cases, unless in those who have been in the habit of indulging in the use of vinous or spirituous liquors, the exhibition of infusions of tonic medicines, such as cinchona, cascarilla, calumba, quassia, gentian, rhubarb, &c. is much to be preferred; although a too early and imprudent use of tonics, particularly while the acute or inflammatory state continues, is often equally hurtful.

During convalescence, a cautious return to full diet should be observed. In all cases of recovery from diseases of the stomach and bowels, in warm climates, the danger of relapse is great. The proportion of solid animal food at first ought to be small, and to consist of the white-fleshed animals. Wine and tonics ought to be of the lightest kind, and the clothing of the patient particularly attended to. A flannel roller or bandage should be worn in the chronic disease around the abdomen and loins, and this ought not to be laid aside. The bandage we consider to be of the utmost importance, as it gives a mechanical support to the bowels, and by doing so, enables them to perform their functions. It also protects the wearer from chills and cold in the most susceptible part of his body. Flannel should also be worn by convalescents, although it may, upon perfect recovery, be thrown aside during the hot season. But the bandage should never be laid aside. If a flannel bandage be found too warm, a cotton one may be substituted; for the support is essentially requisite. The patient, whilst he thus shuns all excesses, or even irregularities, in food, drink, and clothing, ought to be careful of avoiding all exposure to rain, cold, wet, or moisture, and to the night-air and fogs. He should also shun the operation of currents of cold air, particularly during a state of free perspiration.*

* As our limits prevent us from giving the details of cases of chronic dysentery and diarrhœa, treated by us conformably to the above principles, in that full and comprehensive manner in which such illustrations should, we conceive, be given, if given at all; and as this mode of elucidating all the means of cure now discussed would require a very considerable space, we have omitted the insertion of cases at this place altogether; conceiving that the explicit terms in which we have stated our views as to the treatment of the above disorders would render the illustration of them by cases, which are necessarily long, quite superfluous.

SECTION VIII.

Of the Scorbatic Dysentery, or Dysentery complicated with Scurvy.

DYSENTERY sometimes occurs complicated with scurvy in warm climates, both in ships and in armies. The association of these diseases is seldom or never met with in the European community in civil life, for reasons which will be obvious when we come to speak of the causes of this form of disease. Although occasionally observed in solitary or sporadic cases, it generally presents itself amongst soldiers and sailors in numerous instances, owing to the circumstances under which it occurs being those to which large bodies of persons are nearly equally exposed. In all cases of long navigation or transport of troops; in campaigns, sieges, or active military services, within the tropics, when there is a scarcity of fresh and wholesome provisions with the prevalence of the usual causes of dysentery,—this form of disease frequently makes its appearance in a very destructive manner. Hence the importance which ought to be attached to a knowledge of it, particularly to the practitioner in warm climates.

Scorbatic dysentery generally commences with a common diarrhœa, soon succeeded by frequent evacuations of a serous fluid, commonly of a dark colour, with the appearance of sanies, and with mucous and grumous dark blood, more or less mixed with feculent matters. The motions are often preceded by tormina or griping, and attended with tenesmus; but these symptoms are much less violent than in the simple acute dysentery. The fæcal matters are seldom retained, the stools being free and sometimes copious.

The general febrile movement of the system is not at first very remarkable, the pulse being then but little excited, generally small and weak; but in the progress of the disease it becomes quick, yet still small and feeble, marking the adynamic condition of the system characteristic of this malady.

The mouth and gums, the latter especially, are spongy, dark, livid, tumid, and bleed on the slightest pressure: the tongue is often raw, red, and flabby: the countenance pale, heavy, dull, dark, and dejected, sometimes sunk, and occasionally slightly œdematous: the abdomen is generally drawn inwards, and sore upon pressure: the lower extremities œdematous, with livid patches extending to the hams; sometimes with petechiæ, and frequently with ecchymoses and breaking out of old ulcers, with coldness of the skin, particularly of the extremities.

The functions of the stomach are generally greatly deranged: there is often present obstinate vomiting, sometimes of a bloody, grumous, and bilious fluid, with distressing flatulence, and pain about the insertions of the diaphragm, owing to its increased action in the frequent retchings which occur. There is great disrelish of salted meat, or of the food on which the patient had been subsisting, with a desire after vegetable acids, vegetables, fruits, warm spices, fresh meats, and milk.

Through the progress of the disease, copious effusions of blood, with detached portions of the mucous surface of the colon or rectum, are seen in the dejections of the patient, attended sometimes with coldness, lividity of the surface, and leipothymia: sometimes paralysis of the *sphincter ani* takes place, and excoriations about the anus. Flatulence, acidity of the stomach, looseness and falling out of the teeth, further tend to distress the patient, and to increase the extreme despondency under which he labours. There are also great loss of flesh and debility.

The biliary secretion is often more or less disordered: at one time it is copious, but still morbid, increasing the dysenteric symptoms and the excoriated state of the bowels; at other times it is diminished in quantity, and even almost altogether obstructed. The urine is generally scanty, of a deep colour, and sometimes sanguineous.

A favourable *termination* may be hoped for when the symptoms become ameliorated by medical treatment and diet; when suitable food is in the

reach of the patient; when the causes of the disease are removed; and if the symptoms be mild, and the strength of the patient not greatly reduced.

The symptoms which indicate extreme danger are, a lenteric state of the stools; the evacuation of portions of the mucous surface of the bowels; copious hæmorrhages from the intestines; extreme fetor of the evacuations or of the patient; cold, fetid breath; wandering of the mind, or loss of any of the senses; extremely quick or weak pulse; dyspnœa; faintings; cold extremities and cold abdomen; paralysis of the sphincter ani; great debility; vomitings of grumous, offensive matters; foul ulcers of the extremities, or a sphacelated state of the ulcers or ecchymosed spots.

Sometimes the disease degenerates into a state of chronic diarrhœa or lientery; every thing taken by the patient being followed by repeated evacuations, and passing through the digestive canal but little changed.

The *causes* of the scorbutic dysentery are those which have been already adduced as productive of the simple forms of dysentery, combined with living upon salted provisions, especially salted pork, without a due proportion of vegetables and fresh farinaceous articles of diet; innutritious food, or food of an unwholesome quality; deficient diet; the internal use of bad and offensive water, or water kept long in a stagnant state and shut out from the air; debility, however induced, especially by previous disease; an inter-tropical climate; and excessive fatigue, want of the requisite proportion of sleep, and long-continued exposure to moisture and night-fogs.

In addition to these, the influence of concentrated marshy exhalations, particularly in situations bordered by the sea; disappointment; anxiety of mind and depression of spirits; nostalgia; and a too fluid kind of diet, or the habitual use of food in a fluid and highly diluted state, should be taken into consideration as acting frequently in conjunction with one or more of the foregoing causes. Some of these only predispose the system to the operation of the others; and some, which are merely predisposing in one case, are exciting causes in another, when present in an active or concentrated form.

When persons who have been subject to dysentery or bowel complaints, or who have been but once attacked by dysenteric disorder, are subjected to the causes of scurvy, the affection of the bowels generally accompanies it. Indeed, in all cases of scurvy which have come before us, that particular organ which has been previously the seat of some disease, and thereby either weakened in its functions or injured in its structure, is affected in a greater degree than any other.

As respects the form of malady now under consideration, it seems to us that the weakened, and perhaps previously injured, mucous surface of the intestinal canal, particularly of the large bowels, is amongst the first parts to suffer that species of organic lesion characterising the scorbutic disorder; and that the morbid secretions poured into the upper portions of the intestinal canal, and the fæcal matters lodged in the large bowels, increase this morbid state of the mucous surface,—its capillary vessels losing their tonicity, and allowing the escape of part of the blood circulating through them.

We believe also that ecchymoses, similar to those observed on the surface of the lower extremities, and to those seen in the bowels upon dissection of fatal cases, take place in the early stages of the disease; and that the mucous surface covering the ecchymosed patches of the bowels loses its vitality and becomes detached, permitting large effusions of a grumous and semi-dissolved blood to take place from the abraded part. In cases where the patient had recovered from previous attacks of dysentery, leaving the cicatrices of ulcers in either the cæcum, colon, or rectum, it is extremely probable that these cicatrices break out afresh, similar to what is observed in cases of cicatrised ulcers, or other injuries of the extremities.

The *appearances* observed upon the examination of fatal cases of scorbutic dysentery are chiefly an ecchymosed state of the internal surface of the large bowels, sometimes extending, in patches, along the small intestines into the stomach; a livid, purple, or darker condition than natural of parts of the colon, both internally and externally; and foul ulcers and excoriations

in the cæcum, colon, and rectum. The ecchymoses which are here observed are evidently occasioned by the effusion of blood into the cellular tissue connecting the mucous to the muscular tunic, owing to diminished tonicity of the vessels of the part. The mucous surface covering the ecchymosed and blackened spots may be so readily rubbed off by the finger as to evince a sphacelated state of this tunic in these situations. The excoriated and ulcerated parts of the bowels are generally of a deeper hue than natural, and of a foul or dirty aspect. When the bowel is contracted, its coats are commonly thickened, and doughy to the feel; but the colon, as well as the small intestines, are often distended by flatus of a putrid and very offensive odour. The tunics of the large bowels, and indeed of the digestive canal generally, are torn with ease. The liver is sometimes large, soft, and spongy: at other times pale, soft, and deficient of blood, especially in cases in which the loss of blood from the bowels had been great during life. The spleen is almost always greatly softened, and as if rotten; sometimes it is nearly semi-fluid. Indeed, all the textures of the body seem to have their tonicity, or the vital adhesions between the particles of matter composing them, greatly diminished. The blood also found in the large vessels and heart is always of a loose texture, or semi-fluid, if the examination has taken place soon after death. The structure of the heart itself is generally softened, and the pericardium and cavities of the chest often contain a bloody serum.

The lungs are frequently congested, and the surface of the bronchial ramifications of a darker colour than natural, in large patches. The urinary organs are not usually much disordered in structure, but sometimes the mucous surface of the bladder is ecchymosed.

SECTION IX.

Of the Treatment of Dysentery complicated with Scurvy.

THE chief intentions of cure in this complication of dysentery are, to remove the scorbutic condition of the system, and that pathological state of the bowels efficient of the dysenteric symptoms. While these objects are being fulfilled, it will be also necessary to restore the healthy functions of the secreting organs lodged in the abdominal cavity, and to combat any urgent symptom which may arise. These ends having been attained, we should endeavour to impart energy to the digestive organs, and promote healthy secretions generally.

The chief object which ought to interest the mind of the practitioner upon commencing the treatment of cases of this disease, is to make himself acquainted with the causes and circumstances of its origin as far as may be in his power, and to remove them as completely as he may be able. In cases where the causes cannot be removed, he should endeavour to counteract them, both in those already affected with the disease, and in those who, although well, are exposed to its causes. This is particularly important where the medical man is in charge of the crews of ships or of soldiers.

The good effects of lemon-juice, and more particularly of recent limes, with a full proportion of vegetable diet, and moderate quantity of fresh animal food, are so well known, in counteracting, as well as in removing, all the forms of scurvy, that little further need be said here upon the subject. In the particular form of the kind of disease now under consideration, recent lime-juice, with small doses of opium, is particularly serviceable, both in removing the scorbutic taint and the morbid state of the mucous surface of the large bowels. It may also, especially where there are considerable discharges of blood in the stools, be advantageously used

conjoined with mucilaginous substances, in the form of injection, and it may be made the principal beverage of the patient. When lime-juice cannot be obtained, the citric acid should be substituted, and given with mucilages, opiates, and gentle tonics.

In cases where the presence of tormina and tenesmus indicates the retention of fæces and morbid secretions in the bowels, or where the motions are deficient of fæcal matters, an active purgative should be exhibited. The most appropriate medicines of this kind are those which operate gently, without irritating the mucous surface of the intestines. Rhubarb is, perhaps, the best purgative which we can select; and we may either exhibit it in powder, or in the form of infusion with lime-juice. Manna is a useful medicine in cases of this kind, as is also the supertartrate of potash. Senna very frequently gripes, especially when the lime-juice is taken about the same time; and calomel, particularly when given in full doses, readily affects the mouth and salivary apparatus, without being followed by any beneficial effect upon the disease, but, on the contrary, often aggravating it, and increasing the debility of the patient.

If the rhubarb fail of producing a sufficient effect, castor oil, jalap, or the compound jalap powder, with a little powdered ginger, may be substituted. Whatever purgative we may employ will be advantageously combined with warm spices or aromatics, and five or six drops of the tincture of opium or hyoscyamus. When this form of disease occurs amongst the natives of India, purgatives should never be exhibited, unless combined with warm spices and aromatics in large doses; and these latter remedies ought to be employed in the form of injection as well as by the mouth.

The means which are requisite to give tone to the mucous surface of the digestive canal will also impart it to the system generally. Of these the infusions of cinchona, rhubarb, quassia, catechu, in combination with aromatics and spices, and occasionally with opiates, are the most beneficial, especially when a due proportion of fresh vegetables and fresh meat are within the

reach of the patient. We should not content ourselves, however, by directing them to be taken by the mouth only, they should be administered also in the form of injection, and repeated according to their effects.

The exhibition of the aromatic confection, cretaceous powder, or the cretaceous mixture with opium, warm aromatics, and tonics, is frequently serviceable, especially in relieving the vomitings, heart-burn, and flatulence, which often accompany the disease. The different preparations of ammonia, especially the spiritus ammoniæ compositus, are still more beneficial in combating the above symptoms; and although we have not found the effects of the cretaceous medicines upon the bowel disease at all counteracted by the exhibition of the recent lime-juice, in which we so strongly confide for the removal of the scorbutic disorder,—this latter remedy is more compatible with the preparations of ammonia, whilst the ammonia acts as a powerful excitant of the nervous energy of the frame, which is so much depressed in this disease, without increasing vascular action.

When the hæmorrhage and copious evacuations from the bowels are such as lower the powers of life, still more energetic means than those already enumerated should be taken, to arrest it as soon as possible. The tinctura ferri muriatis, in the infusions of quassia or catechu, may be resorted to in these cases, combined with the tinctura opii and warm aromatics; and the same combination may be administered also in the form of enemata; but care should be taken not to induce costiveness, which is always hurtful.

When the external ulcerations become foul, or the ecchymosed spots have a dark or greenish aspect, or the muscles and tendons are hardened and apparently contracted, we have found the nitro-muriatic lotion of the greatest advantage. In such cases, this application ought never to be neglected; and it ought also to be employed as a gargle, to correct the spongy and bleeding state of the gums, for which it is completely efficacious. With respect to its use internally, in this complication of dysentery, we cannot speak from experience, as we have chiefly relied upon the recent lime-juice;

but where this cannot be procured, we conceive that the internal employment of the nitro-muriatic acids would be equally beneficial, as respects the morbid condition of the digestive mucous surface, with its application to the external sores.

When the more urgent state of disease is removed by these or similar means, the practitioner should endeavour to restore the return of the healthy functions of secretion to the abdominal organs. This is best accomplished by the exhibition of the blue-pill with the aloes and myrrh-pill at bed-time, and by any gentle aperient taken in the morning, if the bowels require it, and combined with some tonic medicine. This plan should be continued as long as may be necessary, care being taken to exhibit through the day such bitter astringent and tonic remedies as the symptoms of particular cases require.

In the treatment of this complication of dysentery, as much reliance should be placed upon dietetic means as upon medicinal substances. What the diet ought to be in such cases, every one, even the least acquainted with medical science, must well know; but we beg to insist in the most earnest manner upon the use of recent limes, warm or spiced pickles and preserves, vegetables, pomegranates, shaddocks, quavas, and oranges, with a due proportion of fresh animal food. Rest, the comforts of a good bed, and the use of a bandage about the loins and abdomen, are equally requisite in this form of the disease as in the others which have been treated of.

CHAPTER V.

CURSORY REMARKS ON CHOLERA AND ACUTE DIARRHŒA.

THE brief remarks which we shall offer upon the above subjects will, *first*, have reference to the different grades of acute diarrhœa and bilious cholera; *secondly*, to the treatment which these affections require; and *thirdly*, we shall make a few allusions to the severer forms of cholera. Upon this latter subject, however, we must be extremely brief, as the full consideration which we devoted to the epidemic cholera of the East in our former work,* has left us little to add here respecting it.

SECTION I.

Of Acute Diarrhœa and Bilious Cholera.

THE observations and copious illustrations offered in the First Volume† upon the subject of increased secretion and discharges of bile, render it superfluous to make any lengthened remarks upon the subject of cholera and acute or bilious diarrhœa at this place, especially as the majority of cases of those diseases which are met with in warm climates, particularly in India, are nothing else than discharges of bile, either in large quantity or vitiated quality, taking place spontaneously, in consequence of their accu-

* See the Sketches of the Diseases of India.

† See pp. 297—340.

mulation, and irritation of the parts in which they are lodged, producing more or less symptomatic disorder, owing to the extended connexions of the alimentary canal with the rest of the economy.

When an augmented secretion of bile is produced from the causes so fully insisted upon in our First Volume, the bowels are excited to increased action, and the motions, although fluid, are generally not materially diseased, farther than that they contain a more than usually large proportion of this fluid, which, mixing with the more or less disordered secretions of the intestines themselves, tinges the evacuations of various shades of colour. Yet, although this state of the alvine discharges generally does not indicate serious disease as long as it constitutes the principal disorder, it should always receive due attention from the practitioner; for the circumstance of the evacuations being more fluid and more frequent than natural, and of an unhealthy colour, should alone lead him to inquire into the state of the biliary organs; and as the irritation of the bowels must be either the result of a morbid condition of the bile, or of the secretions lining their mucous surface, or of increased determination of the circulating fluid to this situation, and consequently an augmented secretion from it, he ought to be prepared to combat one or other, or even all, of those pathological states. If the first of this series of morbid actions exists, the rest rapidly supervene, and continue at least as long as it is present,—the morbid state of the biliary secretion inducing both increased determination to the mucous surface, and augmented secretion. This state of irritation can scarcely be said to be, especially at its commencement, one of inflammation; but it may, either from the habit and constitution of the patient, or the circumstances in which he is placed at the time, or from injudicious treatment, be soon converted into inflammatory action of the most unequivocal kind.

When we treated of augmented secretion of bile and discharges of this fluid, after having been pent up in the biliary ducts and gall-bladder for a longer or shorter time, we stated all that was requisite to be said respecting the most common forms of acute diarrhœa that are met with in warm climates, particularly in India, inasmuch as nearly all the disorders which

are commonly called diarrhœa are nothing more than these pathological conditions, with their attendant phenomena, varying merely in character, according as the bile has been long retained in the biliary apparatus, or proceeds from an increased action of the liver existing at the time, and as the secretions collected upon the mucous surface of the bowels are more or less abundant and morbid, or the product of immediate secretion, or of long-continued accumulation.

From this view of the subject it will readily be inferred, that we consider the more slight cases of diarrhœa to be the result of these pathological states of the biliary and intestinal secretions which thus depart from the healthy condition, but in no very remarkable degree,—and of a slight determination of the circulating fluids, short of actual inflammation, to the mucous surface of the bowels; and that we view the more acute, or violent cases of diarrhœa, and even bilious cholera itself, to arise from these states, carried to their utmost height, and consequently producing commensurate disorder of the intestinal canal, and, through it, of the animal economy generally.

When the secretions of the liver and of the intestines themselves are long retained and accumulated, they undergo certain changes, which have already been insisted upon, rendering them more acrid and exciting to the parts on which they are lodged. In consequence of these changes, and owing to those causes of disease which have been fully insisted upon in our First Volume, and when treating of the causes of dysentery, particularly those which diminish the secretions and exhalations of the external surface of the body, which determine the mass of the circulating fluids upon the internal organs, and morbidly excite the digestive canal,—the accumulated and morbid biliary and other secretions are discharged from the loaded viscera into the small intestines, where they induce disorder, great in proportion to their acrid qualities and their quantity, and in relation to the state of the intestinal canal at the time, and the susceptibility of the patient. If the biliary secretion be acrid and in large quantity, and the external causes have occasioned, in addition to the sudden and augmented discharge of bile into the duodenum, much congestion of the liver and

adjoining viscera, sporadic or bilious cholera is the result; for the irritation produced upon the sensible surface of the duodenum by the morbid condition of the bile, affects sympathetically all the parts with which the nerves supplying this part of the intestinal canal have any connexion. Hence the vomitings, purgings, spasms of the abdominal muscles and of the lower extremities, the retractions of the testes, and the collapsed state of the external parts of the body.

Thus it may be perceived, that we view the slighter and more acute cases of diarrhœa, up to the most violent cases of bilious cholera, as merely grades of the same pathological states; as diseases proceeding from morbid conditions of the biliary and intestinal secretions, and owing their severity to the extent of those morbid conditions; as diseases chiefly of function at the commencement, but soon inducing, particularly in their more severe forms, inflammatory action and rapid exhaustion of the powers of life, if neglected or improperly treated.

In those cases which amount not beyond simple diarrhœa, and which have been induced in the way now argued for, it often happens that increased secretion from the mucous surface of the intestinal canal, with determination of blood to this situation, may continue for a considerable time after the disordered secretions which first excited it have discharged themselves, and after the morbid functions of the liver have been removed. Sometimes this condition of the bowels will gradually subside, with but little assistance from art beyond abstinence and avoiding exposure to the causes of bowel disease, the increased secretion from the mucous surface bringing about a resolution of whatever inflammatory action may have been present. This issue should not, however, be always confided in; for, owing either to the habit and constitution of the patient, to the diet, regimen, and treatment adopted, inflammatory action of a slow or insidious nature may supervene, prolonging and rendering more obstinate the symptoms of the disorder, until it terminates at last in inflammation of the bowels, in chronic diarrhœa and ulceration, or in dysentery.

If to the symptoms of diarrhœa supervene a sense of heat, dull gnawing pain, severe griping, and any of the phenomena which we described when treating of inflammation of the bowels, in the forms in which it occurs in warm climates,* the existence of inflammation of their mucous surface, especially of the small intestines, should be suspected, and its termination in ulceration, in the extension of the inflammation to all the coats of the bowel, or in acute dysentery, ought to be dreaded. When this result is feared, the practitioner must resort to the measures pointed out when we discussed the treatment of inflammation of the bowels, and leave nothing to nature which may safely be accomplished by art.

SECTION II.

Of the Treatment of the foregoing Disorders.

WHEN called to the *treatment* of the forms of diarrhœa and bilious cholera here noticed, it would be unsafe to restrain the evacuations by means of astringents and anodynes; for, by so doing, the increased secretion of bile might be converted into inflammation of the liver, or the simple accumulation of this fluid in the ducts and gall-bladder, which would necessarily result from astringent and anodyne remedies, would be followed by serious disorder, if it even failed of inducing inflammatory action of the biliary apparatus. Nor would the bad effects of astringents in such cases be confined to these organs; the bowels would also be liable to suffer; and the sudden arrest of the increased secretion from their mucous surface, and the consequent retention of the morbid secretions collected in them, might be followed by acute inflammation, or by a dysenteric attack. The objects which we should chiefly propose to ourselves in the treatment of these

* See page 16.

disorders, should be, *first*, to carry off the morbid secretions and accumulations; *secondly*, to prevent the supervention of inflammatory action in the liver or intestinal canal; and *thirdly*, to restore the healthy functions of the digestive tube and assistant chylopoietic viscera.

The means which are best adapted to the fulfilment of the first intention generally also accomplish the second. Of these, the use of warm diluents and demulcents, combined or alternated with gentle cooling aperients and diaphoretics, claim particular notice. The warm bath, followed by friction of the surface of the body, and emollient enemata, are also extremely serviceable. When the bowel disease is accompanied with vomiting and spasm, amounting to cholera, it is desirable to allay the irritability of the stomach in the first instance, in order to carry into effect the other parts of the treatment. With this view, twenty grains of calomel may be exhibited with two or three of opium, and followed by gentle purgative or laxative and emollient injections. By these means the vomitings and spasms are generally allayed; after which, demulcents, with the supertartrate or tartrate of potash, the soda tartarizata, or the common effervescing draughts, may be taken, and repeated according to circumstances.

If the discharges become more natural and diminish in frequency, from the use of these means, but little more is required excepting attention to the diet and regimen of the patient; but if the discharges from the bowels continue disordered, the calomel should be repeated at bed-time, and followed in the morning with the compound jalap powder, or any other purgative that may be preferred. If the irritability of the stomach and spasms have not been allayed by the first dose of calomel and opium, two or three grains of this latter medicine should be added to the second dose of calomel, and a purgative and emollient enema administered; afterwards, cooling laxatives and demulcents should be prescribed, and a warm bath of a high temperature, followed by frictions, resorted to.

It seldom happens, even in the most severe cases of acute diarrhoea and bilious cholera, that more active measures than the above are requisite, if

the patient is seen soon after the commencement of attack; and whether the disease proceeds from the sudden irruption of long-retained and acrid secretions, or from the ingestion of irritating and hurtful substances into the stomach, they are commonly equally beneficial. As long, however, as the evacuations are morbid, particularly if they evince a disordered state of the biliary secretion, calomel or the blue-pill must be exhibited at bed-time, and gentle aperients, combined with demulcents and diluents, be taken on the following morning by the mouth, and administered by injection.

If the frequency of the evacuations exhausts the strength of the patient before they improve in their appearances, they may be somewhat restrained by the occasional exhibition of an anodyne combined with a gentle alterative. Of these particular kinds of medicine, the compound ipecacuanha powder with blue-pill, in small and repeated doses, is perhaps the best which can be employed. In cases of this kind, diluents and demulcents should be taken as frequently as the stomach may bear them, and a mild, farinaceous diet directed; whilst laxatives and demulcents should be thrown into the colon twice or thrice daily. For the purpose of injection in those cases, the decoctum lini with the infusum ipecacuanhæ, the common starch enema, gruel with the soda tartarizata or with olive oil, are amongst the best which can be adopted.

The washing-out the colon and rectum by means of warm water only, or of the simplest emollient *lavements* which can be used, is extremely serviceable, inasmuch as the retention of morbid secretions and fæcal matters in the cells of the colon is thereby prevented, the mucous surface of this viscus protected, and the disordered secretions diluted and rendered less hurtful to the parts with which they come in contact. Whilst injections of emollient substances act in this way upon the lower part of the intestinal canal, demulcents and diluents taken by the mouth produce a similar effect upon the upper portions of the tube; render the secretions more copious and less irritating; and, with the assistance of the enemata, diminish the tendency to inflammatory action in the alimentary canal, by soothing its irritated surface, and by determining the circulation to the surface of the body.

If pain, a sense of heat, burning, soreness, or tenderness from firm pressure, supervene in the course of these disorders in the abdomen or hypochondria, or if retchings continue, or even take place for the first time, notwithstanding the above means have been duly employed,—a number of leeches should be applied to the abdomen, and, after they have ceased to bleed, be followed by hot poultices or fomentations. If, in addition to pain, soreness, or sense of heat, the pulse becomes excited and the skin hot, with thirst and a desire for cold fluids, the local depletion ought to be decided, and such as, with the assistance of the means which are to follow, shall remove the most urgent symptoms of disorder. The operation of the leeches will of itself tend to subdue the inordinate action of the bowels, or at least facilitate the effects of the other means which are employed. After the local depletion, a full dose of calomel and opium is generally serviceable, followed by diaphoretics and diuretics exhibited in small and repeated doses.

The best diaphoretic, in cases of this description, is the liquor ammoniæ acetatis with the camphor mixture, the spiritus ætheris nitricus, and a little of the vinum ipecacuanhæ, or small doses of Dover's powder. If the stomach still remain too irritable for the exhibition of these, the common effervescing draught may be taken with advantage, and frequently repeated.

If, during the employment of the remedies now mentioned, the stools become infrequent and scanty, yet still morbid, with griping or tenesmus, or if costiveness be threatened, gentle and cooling purgatives, and laxative, emollient enemata are required. As long as the evacuations are morbid, the retention of them, even for a short time, in the *prima via*, is often productive of increased disorder, and should be avoided. In all cases, however slight, the alvine discharges ought to be attentively examined by the practitioner, in order that he may be able to pursue a judicious plan of cure in all the stages of disorder; for, without such examination, any treatment which he may adopt can be right only by chance.

When the disorder assumes the form of common diarrhœa, and after the morbid accumulations which first excited it are removed, the discharges often

continue, from relaxation of the mucous surface and exhausted tone of the vessels and ducts terminating in it. Cases of this description sometimes become more or less chronic and mild in their course; and, owing to the debility of the digestive functions, the morbid state of the secretions, and the consequently imperfect chylification, acidity and crudities take place in the *prima via*, which tend to perpetuate the bowel complaint. In cases such as these, the use of magnesia, cretaceous preparations, or ammonia, in combination with gentle tonics and aperients, is obviously requisite; and, as the secretions of the liver are generally somewhat in fault, calomel or blue-pill, with the aloetic pill or with rhubarb, may be taken at bed-time. The carbonates of the alkalies are also beneficial in these cases, particularly when combined with a gentle tonic, and exhibited from twice to four times daily. If the evacuations still continue too frequent, the alkaline and cretaceous medicines may be given with the infusion of cinchona or of catechu, or they may be combined with any astringent or aromatic, or with small doses of opium.

Having, by the judicious application of the above or similar means, abated the prominent symptoms of disorder, and procured the discharge of those morbid secretions and accumulations which were its chief cause, the practitioner will next endeavour to restore the healthy functions and tone of the digestive and assistant-digestive viscera. This will generally be most readily accomplished by means of gentle tonics, conjoined or alternated with aperients or purgatives, as particular cases may require. The bitter aperient mixture, the decoction or infusion of bark or of gentian, with a neutral salt, and the tincture either of senna, jalap, or rhubarb, will generally answer the purpose; and as it is material to preserve the hepatic secretions in a healthy state, or to correct them if in any way deranged, the aloetic and blue-pills may be taken at bed-time.

During convalescence, as during the attack, the diet of the patient should be strictly regulated. In the more violent seizures, complete abstinence should be enforced; for nourishment, in whatever shape it may be administered, cannot be converted into chyle; it consequently must undergo

changes to which its chemical affinities, under the circumstances in which it is placed, dispose it, and become an additional source of irritation to the sensible and excoriated bowels. In the slighter attacks, or such as amount merely to a common diarrhœa, the farinaceous and mucilaginous articles of food are the most appropriate. Soups and milk, if longed for by the patient, may be tried, and if they be found to agree with him, may be allowed, particularly the latter; but they are often productive of acidity, and should therefore at first be given with some distrust. As convalescence proceeds, the lighter kinds of animal food may be allowed, and the patient should be instructed to guard against relapses, to which he will for some time be liable, from any error of diet, or from exposure to the external causes of bowel complaints, which are so prevalent in warm climates. In order to protect himself from these, he should wear a flannel waistcoat or a flannel bandage around his loins and abdomen, and avoid exposure to the night-dews and fogs; and in all things conform to those precautions which we have already laid down.

SECTION III.

Cursory Remarks on the Severer Forms of Cholera.

CHOLERA of a severe form, and in several essential particulars closely resembling that aggravated variety of the disease which has been lately epidemic in the East, although somewhat different in several of its symptoms, occasionally occurs in all very warm climates, particularly in India. This severe form of cholera has been denominated by the French practitioners the "*mort de chien*," and has been well described by Dr. James Johnson, in his work on Tropical Climates; but we neither agree with this writer, that this variety of the disease is the same with the epidemic cholera lately prevalent, nor can we

subscribe to his dictum that there is no discharge of bile in cholera. Every man of observation must have remarked numerous cases wherein the symptoms of cholera were both violent and dangerous, where the copious discharge, first of a deep green, and afterwards of a greenish yellow, and, lastly, of a brighter yellow bile, with a bitter and acrid taste, was present throughout the acute period of the disease. This is nothing more or less than the usual form of bilious cholera, respecting which we have remarked, when the subject of increased discharges of bile was under consideration, and in the preceding sections; and the symptoms are the result of the irritation occasioned by the sudden irruption of a large quantity of acrid bile into the duodenum, and of the inordinate excitement produced by it in the whole mucous surface of the alimentary canal.

In the *mort de chien*, on the other hand, and still more remarkably in the epidemic cholera, the discharge of bile is generally arrested, in our opinion, from the spasm of the ducts; whilst the vomiting of watery matter is extremely urgent, and the purging at first frequent, but seldom very remarkably so in the advanced stage of the disease. In these maladies, it would seem that the exciting causes had affected the system so as to arrest the function of biliary secretion, or at least to interrupt its discharge, occasioning also congestion of blood in the mesenteric and portal veins, especially the vessels of the liver, and more or less in all the internal organs; and that the vomitings, purgings, spasms of the abdominal muscles and of the extremities, are the effects necessarily proceeding from these conditions of the internal organs; and, when the powers of life are equal to the struggle, naturally leading to restore the balance of the circulation, and remove the disease.

That the epidemic cholera is identical with the severe form of cholera called *mort de chien*, we cannot affirm, — and we certainly have seen as many instances of both diseases as any practitioner, — but they resemble one another in many particulars. The epidemic disease may, however, be so far the same with the other, as to constitute a variety resulting from the unusual prevalence of this severe form of cholera, favoured by an epidemic

constitution of the atmosphere, which tends to dispose the system to the inroads, whilst it heightens the intensity, of the causes.

In the *mort de chien*, or severe spontaneous cholera, the discharges from the stomach and bowels are nearly the same with those observed to characterise the epidemic disease; the spasms of the muscles, particularly those of the lower extremities, are as severe, although not so general, nor so often affecting the respiratory organs and the muscles of the chest and upper extremities, as in the latter malady. But in the former we have not observed the very dark and ropy appearance of the blood; the cold, wet, and shrivelled state of the surface; the almost total absence of pulse at the wrist; the very marked and rapidly increasing collapse of the powers of life; the disagreeable and earthy odour of the body even during the life of the patient; the burning sensation between the scrobiculus cordis and umbilicus; the complete arrest of the biliary and urinary secretions; the cold tongue and mouth; and the coldness of the respired air, which characterise the epidemic disease.*

In the one, the powers of life are certainly very much deranged, and the circulation and functions of the internal organs greatly disturbed; but in the other, all the derangements and their attendant symptoms are of a much more alarming and malignant nature; the balance of the circulation is much more completely overturned, the circulating fluid itself most sensibly and seriously diseased; the respiratory functions more disturbed; the spasms of the voluntary muscles more general, and more clonic as respects their nature; the purging and vomiting of shorter duration, and forming a less prominent feature of disease; the surface of the body more deprived of its vitality and of the usual quantity of blood circulating through it; and the powers of life are more completely overwhelmed, and sooner sink altogether, than in the disease formerly observed to occur occasionally in warm climates, under circumstances favourable to its appearance.

* See our Treatise on the Epidemic Cholera, in the Sketches of the Diseases of India, p. 41.

In the epidemic malady, the powers of life are insufficient of themselves, even although assisted by the administration of stimulants, to overcome the congestion of the internal organs, and restore the circulation in the surface of the body and in the extremities; and while the large secreting viscera in the abdomen remain engorged by the thick and viscid blood thrown in upon them from the external surface, and their vital powers overwhelmed, their functions of secretion must necessarily be arrested; and thus they are unable to remove the load oppressing them, by one of the modes in which congestion of secreting organs is usually overcome.

In the severer forms of cholera occurring sporadically, the derangements, being less malignant than in the epidemic malady, are more readily removed by an energetic and appropriate treatment. Here the exhibition of large doses of opium, calomel, and stimulants, is generally sufficient to restore the balance of the circulation, remove spasm, and to excite the secreting function of the liver. But in the epidemic disease, the large vessels, particularly the large venous trunks, and the right cavities of the heart, are so engorged with blood, as to be unable to re-act upon the distending fluid, and to throw it into the extreme vessels of the secreting organs and external surface, unless internal and external stimulants of the most powerful kind be employed; and even these are often inadequate, of themselves, to the intention with which they are employed, and occasionally productive of mischief, unless the engorgement of the internal viscera be removed by active vascular depletion, which, while it relieves the heart and empties the large vessels, enables them to re-act upon their contents, and recalls the flow of blood from the centre to the circumference of the frame. Hence it is generally indispensable, in this very formidable disease, to exhibit stimulants and anti-spasmodics internally, with artificial heat and stimulating frictions, in order to rouse the vital energy of the system and relieve spasm, whilst we remove the vascular load by means of full evacuations of blood, and afterwards endeavour to excite the functions of the liver, and diminish the irritability of the stomach, by means of calomel, exhibited in large doses, either alone or combined with opium.

In the cases of severe cholera which occasionally are met with unconnected with the epidemic extension of the disease, large doses of opium, calomel, stimulants, antispasmodics, and external frictions, are generally successful in removing the disease, without the assistance of blood-letting, although this latter measure may be often of advantage. But in the epidemic malady, we consider that this latter means is required by the sense of burning heat so universally complained of by patients labouring under this disease at the epigastrium, and between it and the umbilicus,—by the excessive engorgement of the internal viscera, which their remaining energies are insufficient to relieve,—and by the danger of converting a state of simple congestion into one of inflammation combined with congestion, if the use of stimulants be relied upon alone.

In the *mort de chien*, or severe form of spontaneous cholera, opium in large doses is generally productive of greater benefit than in the epidemic malady. In the former, the collapse of the vital energies is neither so great nor so rapid in its progress as in the latter, whilst the spasms are less general and more tonic in their kind: hence sedatives are borne with less inconvenience and are productive of greater benefit in the one than in the other. But in the latter disease the powers of life are too low to bear the impression of opiates in full doses, unless conjoined with stimulants or antispasmodics of an exciting kind; and, excepting when so combined, we seldom prescribed them in this form of malady.

The epidemic disease requires, moreover, not only an immediate and large depletion of the vascular system, but also a speedy excitation of the functions of the large secreting organs, and a restoration of healthy discharges from the bowels. The watery evacuations, which are so forcibly ejected in the disease, proceed from the exhalation of the more fluid parts of the blood from the congested mucous surface; and we can scarcely doubt that this discharge is a salutary effort of nature, essentially tending to relieve the engorged state of the mesenteric and portal veins. But whilst the watery parts of the intestinal contents are thus discharged, the fæcal matters, consisting chiefly of dark-coloured, viscid secretions, lining the internal surface of the bowels,

are retained, and require removal. In order, therefore, to procure the discharge of these matters, and at the same time to restore the functions of secretion, as respects both the liver and mucous surface of the intestines, the repeated exhibition of full doses of calomel and of active and stimulating purgatives is indispensably requisite. It is chiefly by inducing a free and copious discharge from the bowels, that we bring about a restoration of the biliary secretions, and a resolution of the congested state of the abdominal viscera; and at the same time remove from the blood those impurities which have accumulated in it, owing to the temporary arrest of the functions performed during health by the various eliminating organs of the body.*

* We beg to refer our readers, for further details on the subject of cholera, to our Treatise on the Epidemic Cholera of the East, in the Sketches of the Diseases of India, as we have not considered it necessary to enter further into the subject at this place, than to mark the differences in the nature and treatment of these particular forms of disease, which are often so much alike, as to render a distinction requisite to a successful treatment of them.

PRACTICAL RESEARCHES

INTO THE

DISEASES OF WARM CLIMATES.

BOOK V.

OF THE FEVERS OF WARM CLIMATES, MORE PARTICULARLY THOSE OF INDIA.

FEVERS are the most prevalent diseases in warm climates, and, in many places, the most destructive. In some parts of the East Indies, however, particularly in the districts under the Madras Presidency, the mortality amongst Europeans is much greater from dysentery than from fever; but the comparative prevalence of, and mortality from, fevers and dysentery, as respects the East generally, depend so much upon locality and various fortuitous circumstances, that no positive statement can be offered on the subject. Although results may vary in different places in India, taking the whole range of our possessions into view, the number of deaths from fever will at least equal, if not exceed, that from dysentery; whilst the proportion of deaths in those labouring under dysentery and fever respectively, will, in almost all situations, be greatest in the former disease, unless during the epidemic prevalence of fever of a very malignant type.

In the western hemisphere, the much greater prevalence and fatality of fever than dysentery are extremely manifest. Those who are desirous of

obtaining more precise information on this subject will find sufficient data furnished them in the Tables given in our topographical sketch contained in the First Volume of this Work, in the Appendix to it, and in the Tables inserted in our "Sketches of the Diseases of India."

The types or forms of fever which are met with amongst Europeans resident within the tropics are very various, either as they present themselves in the eastern or in the western hemisphere. But the varieties can scarcely be said to amount to specific differences; and, as far as our own observation has enabled us to judge, in respect of the eastern hemisphere especially, we may affirm, that the differences which they present in their characters are entirely the result of the activity, intensity, and combination of their exciting causes, conjoined with the predispositions of those affected.

We have never remarked any appearance of fever from a specific or contagious source in India; and although believing in the influence of infection as respects the continued adynamic fever of temperate climates, we have, during an experience extending through a quarter of a century, never observed fever to proceed from contagion in this part of the world. The fevers, therefore, of India, and we believe in warm climates generally, are the effects of exhalations from the soil and vicissitudes of season, the former especially, upon predisposed constitutions; and the types and forms which these fevers assume are entirely dependent upon the activity of their causes, in relation to the condition of their subjects, and various collateral circumstances occurring about the time of their invasion.

Fevers, as usually observed in India, and in warm climates generally, vary in every possible grade and form, from the slightest febricula or ephemeral attack to the most malignant type, characterised by extreme exhaustion of the vascular powers, by a yellow tinge of the surface, and vomiting of matters having a dark-coloured and grumous appearance. For the purpose, however, of enabling the inexperienced practitioner to distinguish the various forms of fever which require certain modifications of treatment, and of giving greater precision to our remarks, we shall, after having made a few cursory

observations on the pathology of diseases of this class, notice separately the most remarkable types which fever usually assumes; we shall next consider the complications and terminations to which fevers are liable; and afterwards we shall state our views respecting the methods of cure which the forms and complications of these maladies require; and conclude with remarks on fever as it occurs in the natives of India, and on the management of convalescence from febrile diseases.

CHAPTER I.

CURSORY REMARKS ON THE PATHOLOGY OF FEVER, AS IT OCCURS AMONG EUROPEANS RESIDENT IN WARM CLIMATES, ESPECIALLY IN INDIA.

THE fevers which occur in the eastern hemisphere, and, we believe, in the western hemisphere also, generally present, in one period or other of their course, a determination or more marked affection of some particular organ or texture. We do not, however, mean to contend that the local affection is the cause of fever, but rather that it is a consequence of it, from the predisposition of the part to become diseased. The complications which thus arise in the course of fevers in warm climates may be owing also to the nature of the causes which occasion them, as well as the temperature of the atmosphere, the habits and modes of living of those affected, and the period which they have passed within the tropics.

In a large majority of these fevers, vascular excitement is a prominent character in their early stages; but it exhausts itself sooner or later, according to its violence, to the causes which occasioned it, and according to the habits and constitution of the patient; and is followed by collapse, presenting all the diversities of grade, form, and duration; of the antecedent excitement, and having a due relation to such excitement on many occasions; whilst on others, no such relation, at least as respects degree, is observed, in some cases the subsequent collapse not being remarkable, although the previous action has been high—and in others the exhaustion being extremely great, although the febrile excitement has been but slight and imperfectly developed. In the one form of febrile action, it would seem that the causes of fever, acting upon a sound and but slightly predisposed, although susceptible, frame, brought about active excitement of the vascular system, without

much exhaustion of the powers of life; whilst in the other form of disease, the activity and combination of causes acting upon a highly disposed and weakened constitution, overwhelmed its energies and rendered them unable to manifest that healthy re-action which, in the majority of cases, if not allowed to run too high, or seriously to affect a particular organ, is productive of salutary effects.

So beautifully constituted, and so intimately associated, are all the organs of the animal economy, that causes making an injurious impression upon them, and tending to the destruction of that principle which regulates their operations and associates their various functions, are productive of a certain series of actions calculated to counteract such an impression and to avert its consequences. To observe the means which Nature thus adopts for her own protection, to assist her when she is unable to accomplish her objects, and to protect her from the bad effects of her salutary efforts, which occasionally supervene in those whom the arts, luxuries, or dissipations of life have rendered obnoxious to local or constitutional disease,—are amongst the most scientific, as they are the most important, duties of the physician, in his management of the fevers which come before him in warm climates.

As we conceive that the present Work will be perused chiefly by those who have at least learned the rudiments of their profession, and are acquainted with the phenomena ushering in and constituting fever, we shall confine our observations on the pathology of the fevers of warm climates to whatever seems to us important for the medical man proceeding thither to be acquainted with, and particularly to whatever has a practical tendency. We shall *first* offer some cursory observations on the exciting and predisposing causes of intertropical fevers, particularly those occurring in India; *secondly*, on their various types and forms; and *thirdly*, on their complications and terminations, and on the appearances observed upon the dissection of fatal cases.

SECTION I.

Cursory Remarks on the exciting and predisposing Causes of Fever, as it occurs among the European Residents in Warm Climates, especially in India.

THE most influential of the exciting and predisposing causes of fever were so very fully discussed by us in the sections embraced under the "*General View of the Causes chiefly productive of Diseases in Warm Climates, particularly in India*,"* that we shall here advert merely to a few of the more contingent or occasional causes which usually co-operate with those already treated of in producing diseases of this class.

Amongst the most influential predisposing causes of fever in recruits and individuals arriving in India, are the full salt diet and allowance of spirituous liquors provided for them on the passage to the country. The very frequent want of attention also to the state of the bowels, and the consequent accumulation of morbid matters in the *prima via*, are also circumstances not without their influence in the production of fever as well as of dysentery, especially in disposing the system to the invasion of its more energetic exciting causes. The incautious exposure which many new comers to the climate commit, and the intemperate habits of some leading to still greater imprudences of this kind, have an extremely baneful effect upon the European constitution, at a time when it is naturally liable to disease, from recent migration to a hot from a cold climate.

When speaking of the causes of hepatic derangements, especially of an increased secretion of bile, we shewed that the influence of high atmospheric temperature, especially when the air is loaded with terrestrial exhalations, is to diminish those requisite changes which the blood undergoes in the

* See Vol. I. p. 45—209.

lungs, and to furnish a larger proportion of those elements from which bile is formed to the actions of the liver; and hence, that this fluid is generally secreted more abundantly, and, perhaps, of a more stimulating quality. To us this circumstance appeared to account for the prevalence of hepatic diseases, in proportion to the elevation of temperature, and to the bilious character which fever so very frequently assumes within the tropics generally, as well as in India.

No doubt, other circumstances co-operate with this in the causation of febrile diseases in warm climates, and in forming the types and characters which they present. Of these we shall have to treat more fully in the sequel; but we may here mention, as a very powerful predisposing cause of fevers generally, the plethoric and phlogistic diathesis of the majority of those who proceed from Great Britain to our Indian possessions, which is generally heightened by the circumstances in which they are placed, and the modes of living they enjoy on their passage from England.

The indulgences also of soldiers and sailors in the use of spirituous and inebriating liquors are also extremely productive of febrile diseases, not so much from exciting a febrile attack, for this is seldom observed as a direct consequence, (for when disease proceeds immediately from this cause, it generally either consists of an inflammatory affection of the mucous surface of the stomach or bowels, or of the brain or its membranes), but from the predisposition it creates in the individual of being affected by the more energetic causes of fever, and by the exposures to which habits and indulgences of this kind very generally lead. We should not have directed so much attention to this almost self-evident proposition, if we did not believe that the bad effects of intemperance are considered by many persons as of little importance amongst the list of causes of intertropical diseases. That intemperance, however, is most influential, chiefly as predisposing to the inroads of the external agents of fever and dysentery, our own experience has uniformly shewn; and our observations with respect to its agency have been confirmed by all the official returns we have examined

at the India House and at other public offices, to which we have kindly and liberally been allowed access.

We will grant that, under certain circumstances, and with due precautions, a liberal use of vinous or spirituous liquors will not be followed, at least for a considerable time, by any pernicious effects, and even that such habits may be sometimes salutary at particular periods; but evil will at last result from them; and the lower classes of the community generally carry this species of indulgence to such excess as to lead to numerous exposures to those causes of disease which might otherwise be avoided by them. It is probable that an indulgence in wine or spirituous beverages during the temporary prevalence of the chief causes of unhealthiness in a warm climate, provided that it never exceeds the verge of sobriety, may fortify the system against the invasion of malaria, and exposures to night-chills and fogs. But the excitement thus occasioned requires to be kept up moderately and equably, never to reach above a certain pitch, nor fall much below it. Thus regulated, the exciting causes of fever may sometimes be counteracted at periods of their greatest prevalence, or during temporary occurrences of epidemic disease. But can indulgence in habits of this description be so regulated? or do instances occur, amongst those who thus habituate themselves, of regular and undeviating excitement,—never rising beyond sobriety nor sinking into collapse? We have not seen such instances, and we believe they seldom or ever are met with. Moreover, if they could possibly occur, the practice would inevitably be followed, in a longer or shorter period, by visceral disease; and the individual who should take this way of shunning one malady would fall into another, although more distant, yet much more dangerous, as respects its final issue.

Next to the influence of intoxication in disposing the system to the inroads of the exciting causes of fever, is extreme fatigue. Soldiers and sailors, the former especially, during active service in the field, are often liable to suffer from this cause, particularly when it is conjoined with the depressing passions of the mind, and with insufficient nourishment, or food

of a bad quality. Excessive exertion also, while exposed to the sun, wearing damp or wet clothes, and want of the requisite proportion of sleep, are among the most frequent accessory causes to which soldiers are subject during active service. Thus circumstanced, they are readily affected by the exhalations from the soil, and hence they generally suffer greatly from fever and dysentery; and if they be kept exposed to, or cannot be removed from, those causes, and are, moreover, subjected to night-chills, to fogs, and moisture, during the progress of disease, malignant symptoms and sudden collapse of the powers of life generally supervene, and a fatal termination takes place in a large proportion of those affected.

In our speculations respecting the causes of fever, a certain share of influence should be imputed to the habit of body and the temperament of those affected, and viewed in relation to the exciting causes, and those collateral and contingent circumstances which accompany them. The same causes which produce continued fever in one person will often occasion an intermittent in a second, or a remittent in a third; the type of the disease being the effect of the habit, diathesis, and predisposition of the patients, together with the activity and combination of the exciting causes. That this is the case is evident from the operation of the same agents upon large bodies of men, differently circumstanced as respects habit of body, temperament, and the time of residence in a warm climate. Amongst the plethoric, sanguine, and recent comer to the country, the disease will be continued and possessed of high inflammatory characters, frequently with local determination; whilst in the long residenter, the disease will assume a remittent or intermittent type, either in their simple or complicated forms, according to the activity of the exciting causes, and various other circumstances, acting internally or externally as respects the patient, and having a certain influence, although not of a precise or uniform character.

Amongst those causes which seem to modify the character of fever during its progress, and occasion local determinations of vascular action, or excess of disease in a particular organ or texture, there are perhaps none more influential than the previous habits and constitution of the patient. In those

addicted to intoxication, the liver and bowels generally evince the most marked signs of disease; whilst in the plethoric and robust, vascular determination of blood to the head and its consequences are the most remarkable.

Amongst other consequences frequently *resulting from* and attendant upon intoxication, we may allude to the exposures to the sun and to the night-air to which it so frequently leads; the exhaustion of the nervous energy, and dyspeptic state of the stomach which it uniformly induces; and the effects usually produced by it upon the moral and physical constitution of the individual. Exposures to the sun are, under all circumstances, injurious, but especially so when the system is affected by the spirituous and intoxicating liquors in which soldiers and sailors indulge in warm climates. The subsequent collapse also which always follows a day of excitement from this species of indulgence, generally takes place in the early part of the morning, when the exciting causes of fever are most concentrated; and hence their effects cannot fail of being fully produced, as the constitution is the most favourably disposed to their invasion. During the night and morning, the dews and fogs saturated with terrestrial exhalations load the atmosphere; and whoever respires the air thus fraught with the exciting causes of fever, in a state of predisposition from previous exposure to the powerful rays of the sun, from fatigue, or from the exhaustion following excitement of any kind, will generally become affected by them.

Oppletion of the stomach with too much food, as well as the use of inebriating beverages, also disposes the system to the influence of the external agents of disease. Both habits are productive of a dyspeptic state of the stomach; and when the digestive energies are weakened, in whatever manner this may be occasioned, the strongest defences against the invasion of disease are thrown down. When the functions of digestion lose their activity, mental energy frequently becomes lowered also, and despondency is not an unusual concomitant.

Of all the influences which act upon the system in disposing it to the injurious impression of the external agents of fever, there are none which act

more surely than those which originate in itself, operate internally, and impress the passions and affections of the mind. Of these, the fear of disease, especially of fever, despondency, grief, anxiety of mind, vexation, disappointment, or whatever tends to lower the mental and vital energies, are amongst the most remarkable.

Although atmospherical vicissitudes are not often themselves the active agents of fever, yet they are powerfully influential in favouring the generation as well as the operation of the more immediate causes, and in determining the type, form, and severity of the disease, which must be viewed as proceeding in a more direct manner from the exhalations of the soil itself, or of the organised remains which cover it, than from other agents. But whilst we consider that atmospherical vicissitudes thus perform a secondary part in the causation of fever, let it not be understood that we view that which is performed by them as being of little importance. Whether as respects endemic or epidemic disease, the influence of atmospherical changes is most powerful, and is exerted in a three-fold manner. *First*, they assist in the generation of those exhalations from the soil which we have shewn to be the chief causes of intertropical fevers; *secondly*, they give them activity, by enabling the atmosphere to be the vehicle of their conveyance; and, *thirdly*, they dispose the body to their operation. Thus a hot, moist, and stagnant state of the air, following heavy rains, which have been consequent upon an unusually long period of drought and of high temperature, is generally productive of endemic disease, sometimes to so great a degree as to assume an epidemic character, especially in situations where the sources of malaria, such as we have described them in our First Volume, exist. Here the influence of atmospherical vicissitudes is sufficiently evident, as respects the generation of miasmata, its suspension in a moist, stagnant, and close atmosphere, and the predisposing operation of heat and moisture upon the animal frame.

The great influence which changes of season exert upon the prevalence and form of febrile diseases, has been fully demonstrated in the Tables and papers published in the Appendices to this Work. All such changes are

nothing more than atmospherical vicissitudes; certain peculiarities of weather continuing so long as to constitute a season, but each change being followed by effects which are visible in the appearance of the human species, and in the character of their diseases. Thus, nearly in all parts of India, the first rains which follow the hot and dry season are productive of remittents, bilious fevers, &c. according to the habit and constitution of the patient. During the rainy and cold seasons, intermittents and dysentery are prevalent; and during the hot seasons, fevers of a continued type are most frequently observed. In all these forms of disease, terrestrial exhalations or noxious miasms, whether floating in the atmosphere or in the water which is used, are the chief exciting causes, the atmospherical vicissitudes acting conjointly with a determinate degree of energy of the exciting causes, and with the habit, constitution, and predisposition of the individual, in forming the type and character of the disease.

But vicissitudes of season, and of weather during any particular season, act not only in the very direct and obvious manner which we have now pointed out, but they also affect the natives of the soil especially, in a more indirect manner, chiefly by influencing the productiveness and quality of the crops, upon which they are chiefly dependent for nourishment. The effects produced in this way by the nature of the seasons can scarcely be estimated to their full extent, except by those who are well acquainted with intertropical countries. There are no causes more influential than a scarcity of nourishment, and food of a bad quality, in disposing the system to the effects of noxious exhalations; and it generally happens that the weather, which is most injurious to the productions of the soil, and to the collecting of them in their due state and season, is also most calculated to promote the generation of such exhalations, and to favour their operation on the human frame.

Fevers, which are usually only endemic to certain places, not infrequently become epidemic under circumstances like the above, and are aggravated in character, owing both to the greater intensity of the causes thus generated, and to the increased predisposition of those affected. During

famine and defective crops, the body is not only insufficiently nourished, but the quantity of nourishment afforded is generally of an improper and even hurtful quality. Hence the greatest debility is occasioned, and predisposition to fever is thereby heightened to a proportionate extent, upon the slightest exposure to any of its exciting causes.

Although fevers, owing to the wide diffusion of the above causes, frequently assume an epidemic form, yet it must be admitted that they are occasionally epidemic without these or any other causes of an evident or appreciable kind being present: here we must ascribe them to some constitution of the air which we cannot recognise otherwise than by its effects upon the animal economy; and whether proceeding from certain electrical states of the atmosphere or some other conditions of this fluid, is equally unimportant, as long as we have no precise information respecting the electrical conditions which favour the prevalence of fever, and the relation which the electrical fluids diffused in the atmosphere hold with the commencement, progress, and decline of epidemic diseases.

There can be no doubt that the usual causes of disease, especially those which proceed from the soil, and from the body itself in a state of disease,—in short, all emanations from dead and living organised matter, make a more than usually strong impression upon the frame, during the prevalence of epidemic influence in the air; but whether this activity is the result of increased quantity or intensity of the cause, or greater predisposition of the individual, or of both conjoined, it is difficult to ascertain. It is most probable that the constitution of the atmosphere, whether it consist in a certain state of its electricities or not, tends to augment the quantity and intensity of the causes of fever, while it predisposes the system to their operation. This seems to be the whole amount of our knowledge,—its utmost extent; and beyond it there can nothing be advanced but vague hypothesis and speculation. Yet even these are not without their uses, inasmuch as they lead the mind onwards to research; and inquiry can seldom be long prosecuted without some rays of knowledge breaking in upon the inquisitive mind.

The question of epidemic influence can scarcely be agitated without bringing the nearly associated subject of contagion before us. We believe that emanations from bodies affected with fever, especially in a warm, moist, close, and imperfectly ventilated situation, will induce fever in those predisposed to its invasion, particularly during the epidemic prevalence of the disease. We do not deny that fever has been propagated in this manner in warm climates or in India; for we are well aware of the difficulties which beset even a fair and unprejudiced consideration of this but too often intemperately and unphilosophically discussed question. But we may state the result of our own observations, and of our own conviction upon the matter—the result of what we have seen and thought with an unbiassed mind. Although we have admitted that fever, and even dysentery, may diffuse themselves, under circumstances similar to that stated above, in India or any other warm climate; and although we believe that they are so propagated in temperate climates, during circumstances favourable to the generation of a noxious miasm, and when it operates on predisposed persons, yet we never observed an unequivocal occurrence of the kind in any part of the East. The circumstances in which the sick are placed in a warm climate, and the free ventilation which is constantly preserved in the hospitals, and in the apartments of the diseased, are, perhaps, the principal reasons that can be adduced for this exemption from one of the chief causes of fever, especially amongst Europeans resident in a warm climate.

Amongst the natives, when fever occurs either in endemic or epidemic forms, the causes are generally so obviously connected with emanations from the soil, defective crops, vicissitudes of season and of weather, and generally act so uniformly upon all affected by disease, that the active agency of these causes cannot be denied; whilst fever seldom or ever extends beyond the sphere of those causes, and when it does, it cannot be unequivocally assigned to contagion, inasmuch as there are abundant sources to account for its occurrence, in the locality and circumstances of the soil, or of parts of the country visited by the person affected. It is possible, however, that want of personal cleanliness and of ventilation, apartments crowded with sick, and close dirty streets, may promote the generation of a noxious miasm, which, acting during the epidemic prevalence of fever, and in conjunction

with causes proceeding from the soil, upon a predisposed frame, may produce fever of a malignant nature; and that, under such circumstances, which will but rarely occur amongst Europeans resident in warm climates, infection to a certain extent will be present, and in such a manner as to furnish plausible arguments to the espousers of both sides of this keenly contested question.

When the natives of India are sick, they invariably confine themselves in small unventilated apartments; and sometimes they have charcoal fires in their rooms, which render them insufferably hot and suffocating. This practice is doubtless destructive of life; and if several persons were confined in a single apartment, or even in a house so circumstanced, we conceive that the air in it would be rendered so impure as to generate disease in those who should respire it, with a predisposed state of system. We believe that this circumstance combines with endemic and epidemic causes in promoting the prevalence of fever amongst the natives; but as it has no existence in respect of Europeans, it cannot be considered as influencing the prevalence or progress of diseases among them.

The majority of instances of unusual prevalence of fever in India, particularly amongst the natives of the country, have been consequent upon heavy falls of rain, excessive moisture of the earth, and a moist and stagnant state of atmosphere — circumstances manifestly productive of copious exhalations from the soil when acted upon by an intertropical sun. During more than usually heavy falls of rain, situations not formerly inundated are placed under water, and much of the vegetable and animal remains covering the high grounds and decaying in the woods and bushes, are washed into the tanks and low places, leaving the more level plains, especially those surrounding large tanks and skirting the banks of rivers and streams, at the end of the rains covered with a dense coating of slime, consisting chiefly of animal and vegetable matter mixed with fine dust and clay in a state of putrefaction. This does not fail of tainting both the moist and stagnant atmosphere, and the water preserved in the tanks for the use of the inhabitants; and if, in addition to their other effects, heavy falls of rain have injured the crops, the

systems of the natives are disposed from this circumstance, as we have already shewn, to the invasion of the miasms which thus infect both air and water. The native doctors, who are frequently men of keen observation, and unprejudiced by doctrines of contagion or non-contagion, generally explain the prevalence of fever in this way, without calling in the aid of infection; and when they cannot explain it by such physical agencies, the operations of some evil spirit are the sources to which they impute the calamity.

Although debility, or exhaustion of the powers of life, dispose to certain forms of intertropical fevers, especially to intermittents or remittents, or low continued fevers, yet early age and the prime of life, particularly in the male sex, and when connected with the sanguine, irritable, and bilious temperaments, and plethoric habit of body, predispose to attacks of bilious, inflammatory, and the more continued forms of fever. Childhood, the female sex, and advanced age, are remarked as furnishing some degree of exemption from the fevers of warm climates, in their more continued and dangerous forms.

Before concluding this part of our subject, we must express our belief that the doctrine so warmly contended for by Dr. Balfour, respecting solar influence in the production of fevers, and in occasioning relapses, is founded in a correct observation of the phenomena connected with the causation of these diseases. Our own observations have tended to confirm the doctrine, and we have always found it requisite to conform our practice to it, especially during convalescence from febrile diseases. How the lunar influence is excited, and why it should have relation to periods of full and change, we cannot pretend to form any opinion farther than to suppose that it is through the medium of atmospherical vicissitudes, which are more marked at these particular periods, and to the greater rise and fall of the tides on the sea coast, influencing the states of the marshy grounds and banks of rivers in the low districts of country skirting the sea-coast, and forming a large portion of the lower provinces of Bengal. Whilst, however, we admit that these circumstances may partly serve to explain the relation so strongly, and, we believe, justly insisted upon by Dr. Balfour, we conceive that they do not

altogether explain it, inasmuch as the influence is remarkable in districts of the country not affected by the rise and fall of the tides, and during seasons and changes of the moon not characterised by any sensible or appreciable vicissitudes in the state of the atmosphere or of its temperature.

SECTION II.

Cursory Remarks on the Types and Forms of Fever in Warm Climates, particularly in India.

INTERMITTENT fever, in all its forms, occurs amongst Europeans resident in warm climates, and in the natives themselves. It is most frequently met with in those Europeans who have been previously the subject of the continued or remittent forms of fever, and have resided for a longer or shorter time in the country, or, in other words, who have suffered from the seasoning fever. It is most prevalent during the rainy and cold seasons, when marshy exhalations are abundant, and amongst those in whom the tendency to the inflammatory forms of fever is least remarkable, as in the spare, relaxed, and debilitated, and those who have been suffering from the continued and remittent types of the disease.

The tertian, double tertian, and quotidian, are the chief forms which intermittents assume in India; but quartans are also prevalent, especially in cases of protracted disease, and when the intermittent form of fever supervenes to the remittent and continued type. The tendency of intermittents to change their type, frequently from tertians to double tertians, quotidians, or to quartans, and to assume irregular and complicated forms, is particularly remarkable in some countries and districts, more especially those where the sources of malaria are most abundant, and the accessory causes most numerous.

Generally speaking, the more irregularity the disease presents, the greater is the derangement of the abdominal viscera with which it is complicated; for we have seldom observed intermittents put on irregular forms, without presenting evident signs of more or less derangement of the liver, spleen, and alimentary canal.

In many of the more northerly and higher districts of India, intermittent fever frequently assumes an inflammatory character; sometimes but slightly, at other times very strongly, marked. This is more evident in the quotidian and tertian forms of the disease, and when complicated with evident determination of the circulation to the liver, spleen, lungs, and head. It is necessary to remark this particular character of the disease, as it often depends upon the season, habit, and constitution of the patient, requires a modified practice, and, when not judiciously treated, often leads to serious organic disease in a short time, or runs into the remittent or continued types of fever.

Remittents of an inflammatory character are much influenced by locality and by season. In the higher districts of the country they are frequently met with, especially during the cold season, and are particularly prevalent in those who have suffered the least from the climate or from previous disease. In cases of this description, the febrile action often runs very high during the paroxysm, sometimes with delirium, at other times with marked disorder of the biliary and digestive organs.

Agues, besides presenting an inflammatory character, often furnish, particularly under circumstances of an opposite nature to those now alluded to, evidences of an adynamic or typhoid form. This generally occurs in the low marshy districts near the sea-coast, on the banks of rivers, or in the dense jungles, woods, and ravines of inland districts. During the active service which troops often undergo in the field, and in situations such as we have just now particularised, intermittents, characterised by great debility and a typhoid form of the symptoms, are very frequently met with, either as the primary disease, as secondary to some other form of fever, or as

complicated with disorder of some internal organ, as of the spleen or liver, or both.

When agues assume this form, the quartan, quotidian, double quartan, and irregular forms of the disease, are generally the most prevalent, and the intervals between the paroxysms are usually marked by symptoms of great exhaustion, debility, and deficient vitality in the frame. In these also the surface of the body evinces more serious disorder; the countenance is more anxious and squalid; the tongue more sensibly disordered; the evacuations more morbid, with greater tumefaction in the hypochondriacal regions.

The practitioner, therefore, proceeding to warm climates, may expect to meet with intermittents in all the forms usually noticed in elementary works,—presenting all the varieties there described, in respect of regularity or irregularity, although not ascribable to definite or specific causes; and, in addition to these, he will find them marked by certain characters, which are of much greater importance in practice than those which have been more insisted upon by the numerous writers who have described the various irregularities which they assume, with greater minuteness than our knowledge of the causes of these irregularities would seem to warrant, and without an adequate advantage to practice.

The characters which we have noticed above, deserve attention on the part of the physician, and are such as indicate the nature of the treatment which ought to be adopted. Conformably with this view, and for the purpose of giving greater precision to the remarks which we shall offer in the sequel upon the treatment of intermittents, we shall distinguish this genus of fevers, in addition to the specific forms which they assume, as follows:—*First*, simple and uncomplicated ague; *secondly*, intermittents with more or less of the inflammatory character, or those accompanied with considerable arterial excitement; *thirdly*, intermittents with exhaustion of the powers of life, or with typhoid symptoms; and, *fourthly*, complicated ague, or intermittents associated with disease in some internal viscus.

These are the chief peculiarities which we shall notice at this place, with reference to the particular varieties of this type of fevers. It is not our intention, nor is it in any respect necessary, to discuss the different forms which the paroxysm of ague assumes under the various circumstances in which it is observed, especially as those particulars are detailed at sufficient length in works which are in the hand of every practitioner.

Remittent Fever is the most prevalent of all the forms of febrile disease occurring in warm climates. It is most frequently observed at the commencement of the rains, and during the hot season, particularly in those who have been resident in the country for some time. It assumes, according to the habit and temperament of the patient, the season of the year, and various other accessory and predisposing circumstances, operating in conjunction with the quantity and activity of the exhalations from the soil, in which the disease chiefly originates, different forms, constituting distinct varieties, and requiring a modified method of cure.

The *varieties* which we have chiefly remarked in our practice we have generally characterised as follows:—*First*, mild remittent; *second*, inflammatory remittent; *third*, bilious remittent; and, *fourth*, malignant remittent fever, or remittents with typhoid symptoms.

The mild form of the disease is most frequently met with among those who have been exposed to the usual causes of intertropical fevers with a comparatively sound state of health, though predisposed to disease from various contingent circumstances; and occurs oftenest during the cold and dry seasons, and from similar causes to those producing intermittents.

The inflammatory remittent is frequently observed among those who have resided for a short time in the country, and those of the longer residents who are of the sanguineous and irritable temperaments. It is often met with in the northern and more elevated districts of India, and is not infrequently accompanied with signs of gastric and bilious

derangement, and with determination of the circulation to the head, producing considerable lesion of the functions of the brain and nervous system.

The bilious form of remittent fever is chiefly marked by the state of the skin, the pain in the forehead and sockets of the eyes, suffused conjunctiva, the highly bilious state of the evacuations, yellowish or dusky appearance of the countenance and surface of the body, the bilious condition of the tongue, bitter taste of the mouth, &c. In this form of the fever, the biliary organs are in a remarkable state of excitement, bile being found either in excess or in a vitiated condition, or both. When this fever is not removed by judicious treatment, or when the means resorted to are calculated to aggravate it, very serious lesions often supervene in the liver and alimentary canal.

The bilious remittent is most prevalent in low marshy situations on the sea-coast, banks of rivers, and thickly wooded districts in the more inland countries. It prevails chiefly among Europeans who have not been very long resident in a warm climate, and in those of a bilious or bilio-sanguineous constitution. It is very dependent upon the nature and vicissitudes of the season; and on some occasions it seems to assume an epidemic character, owing to those circumstances of season which are calculated to disengage exhalations from the soil, and at the same time to predispose the system to their operation. Thus, it is an extremely frequent form of fever during the hot months following the rainy season, especially when the previous rains have been unusually great; and at the commencement of the monsoon.

The malignant form of remittent fever is that which occurs in the most unwholesome localities, and during the most unhealthy seasons. Places most productive of malaria, when exposed to a scorching sun after heavy falls of rain, give out the noxious exhalations so abundantly, as to occasion the most marked effects upon the human constitution, especially when these exhalations accumulate in a moist and stagnant atmosphere. The effects which this state of air produces are most unfavourable to life, especially when it is associated with the various accessory causes described in the

preceding section, and its operation on the frame favoured by the causes of predisposition there alluded to. Hence, remittents frequently assume more or less of a malignant form, associated in some cases, at the commencement, with the inflammatory, in other cases with the bilious character, in various districts both in the eastern and western hemispheres; and during certain seasons and states of the atmosphere, they become prevalent in an epidemic form. This is remarkably the case with the prevailing fevers at Seringapatam, Guzeratt, Rangoon, and Batavia.

In this form of remittent fever, the symptoms vary very much, according to the susceptibility, habit of body, and constitution, of the patient, the concentration of the exciting causes, and the number and kind of those contingent and accessory circumstances which act in conjunction with them, and influence the disease in its progress. In some cases this fever presents, at its commencement, but indistinct remissions, the febrile action being extremely great; the skin harsh, dry, and burning, with delirium and determination to the head and biliary organs; great pain in the loins and limbs; constant sickness and vomiting of greenish yellow matter; hurried respiration; quick, full pulse; clammy perspirations on the extremities; loaded tongue; bilious state of the alvine evacuations, the motions being watery, green, curdy, and variously deranged. In other cases the vascular excitement is less remarkable, and the symptoms altogether of a more typhoid kind. The delirium, instead of being marked by maniacal excitement, as in the foregoing cases, is sometimes low or muttering; the pulse small and quick; the abdomen tumid and hot, while the extremities are cold and clammy; the evacuations foul, morbid, and offensive; hurried respiration; fuliginous tongue, with aphthæ or spongy gums; frequent or constant vomiting, at first of ropy, bilious fluids, afterwards of a grumous fluid, resembling black coffee-grounds; a dark, pitchy appearance of the motions, &c. In both these varieties of malignant remittent fever, a yellowness of the surface of the body occasionally presents itself about the third or fourth day of the disease, commencing first in the *tunica adnata* of the eye, neck, belly, and breast. In some cases the yellow seems to pass into a light greenish tinge. Dysenteric symptoms not infrequently accompany this form of remittent.

In other cases of this variety of remittent, the symptoms are at first mild, the vascular excitement not being considerable, nor the disturbance of the cerebral and digestive functions such as to create alarm, when suddenly great exhaustion of the powers of life, characterised by a weak, fluttering pulse, black, dry, and foul state of the tongue, offensive evacuations, a disagreeable foetor of the perspiration, and extreme prostration of strength, retchings of dark, grumous matters, sunk countenance, great anxiety, tenderness of the epigastrium, with fulness of the hypochondria, and a squalid or yellowish state of the surface, supervene, and indicate extreme danger in all cases, and approaching dissolution in many.

This unfavourable change and termination of that form of remittent, which, at its commencement, seemed to indicate the least degree of danger, generally take place in those whose constitutions have been most predisposed to disease, who have suffered from attacks of bowel complaints, are of the most relaxed and debilitated frames, and who, during the progress of the fever, are exposed to the continued action of those agents in which it originated, sometimes existing in a concentrated form, and accompanied with many of the accessory causes, as exposure to the influence of cold, damp, night-air, and other circumstances already enumerated.

Sometimes the remittent commences in the mild form now noticed, the patient being even able to walk about his apartment for several days, complaining chiefly of frequent irregular accessions of fever, when suddenly a violent and malignant state of febrile excitement supervenes, which suddenly exhausts the vital energy of the frame, and either quickly carries off the patient, or injures the structure and functions of the abdominal viscera, to an extent scarcely admitting of removal by the most judicious treatment.

In other instances, the symptoms of excitement are seldom manifest at any period of the disease, the febrile exacerbations consisting merely in an aggravation of the anxiety, restlessness, and general distress of the patient, with, in some cases, increased sickness, augmentation of pain at the epigastrium, head, and loins, &c., the pulse being but little accelerated until

the close of the malady, and the temperature of the surface, unless at the epigastrium, being rather under the usual standard. In all such cases, however, the state of the tongue, and particularly the alvine evacuations, indicate danger; the former being either of a very dark colour and deeply coated, or soft, flabby, and lobulated; and the latter extremely offensive, generally of a blackish or greenish brown colour, of various consistency, and otherwise morbid. It would seem as if the causes of the disease had, in the above description of cases, nearly annihilated the irritability of the moving fibre, and deprived the system of its ability of re-acting upon, or superseding, that state of the vital energy induced by their first impression.

Continued fevers are most frequently observed amongst the more recent visitors of warm countries, and constitute their seasoning to the climate. They occur also amongst older residents and the natives; but in these, remissions, although indistinct, may generally be detected. The continued fevers which attack new-comers to a warm climate always present more or less of an inflammatory character at their commencement; and a similar form obtains among all Europeans residing in it, although the celerity with which the inflammatory stage, or that of active excitement, exhausts itself, varies according to the nature of the causes, and the habit and constitution of the patients.

The most remarkable forms of continued fevers which have come under our observation in warm climates consist—*first*, of simple inflammatory fever; *secondly*, bilious inflammatory fever; and *thirdly*, of malignant continued fever. These distinctions, derived from the nature of the most prominent symptoms in each of the forms respectively, will characterise the more fully marked cases; but numerous instances will occur in practice, in which the above distinctions will not apply throughout the progress of the disease, and other cases will be met with where the practitioner will be at a loss to say in what particular variety they ought to be classed. He will very frequently find, that those fevers which are most inflammatory at their commencement become most malignant at their close; and he will often observe very prominent symptoms of bilious derangement conjoined with those of extreme

exhaustion of the powers of life. But when the signs of malignancy are only the consequences of previous excitement, we do not conceive that the disease should be, on that account, characterised specifically by the term malignant, especially as the extreme exhaustion, from which the symptoms usually denominated malignant or adynamic proceed, does not take place when the previous excitement is moderated by a judicious mode of treatment.

The bilious inflammatory, as well as the simple inflammatory form of fever, very often terminates in the malignant or adynamic state; indeed it more frequently experiences this change than the foregoing variety, and often at an earlier stage of the malady; yet still, as in the other, the malignant or adynamic state is the consequence of the previous excitement, rather than the direct effect of the causes of the disease, although the causes may have, in many cases, a considerable influence in the early and marked appearance of this state. In both the inflammatory and the bilious inflammatory form of remittent and continued fevers, we must suppose the exciting causes as being insufficient to overpower the vital forces of the system, owing either to the inadequate concentration of these causes, to the slight predisposition of the patient, or to the unimpaired energy of his frame. Hence, vitality being not materially affected, re-action upon the more immediate effects induced in the system by the causes of fever supervenes, and inflammatory excitement is the consequence, which, according to its degree, and to the extent to which these causes may have impaired the vital resistance of the frame, exhausts the irritability of the moving fibre, and induces the subsequent signs of collapse.

On the other hand, malignant continued fever, as well as the more malignant forms of remittent fever, betray symptoms of exhaustion, or the adynamic state, from the earliest appearance of disorder. This state follows immediately upon the impression of the exciting causes, which, owing either to the activity and combination of those causes, or to the high state of predisposition of the patient, overpowers the energy of the system, and prevents it from making any but inefficient efforts at re-action: these efforts, when made, generally take place at the usual period at which

the exacerbations in remittents supervene, and thus the malignant continued fever frequently presents nearly similar phenomena to the malignant form of remittent fever.

In those instances where, from the activity of the causes, or the state of the individual, the powers of life are so far overwhelmed as scarcely to admit of re-action, the patient often seems to sink progressively from the period of attack; the most energetic means, employed with a view of rousing the energies of life, being often insufficient to induce excitement, and enable the secreting viscera to perform their functions. In those cases where the inefficient efforts at re-action are made at different intervals, the frame seems to be more and more exhausted after each effort, either until the system sinks exhausted in the struggle, or the functions of the secreting viscera become gradually re-established by the means employed, and the energies of the frame are thereby slowly restored.

The more inflammatory forms of continued fever, particularly as they are observed to occur in India amongst recruits and those who have not suffered from disease since their arrival in the country, prevail chiefly during the dry and warm seasons. That this type of fever, especially its more malignant and bilious forms, is in a great measure dependent upon terrestrial exhalations for its origin, cannot, we think, be denied; the form which the disease assumes resulting from the intensity and number of the exciting and occasional causes, in conjunction with the predisposition, temperament, and habit of the individual, and the various accessory circumstances to which he has been, or is at the time, subject. But continued fever, presenting inflammatory symptoms, nevertheless, frequently supervenes within the tropics, independently of the agency of malaria, in those who have been exposed to the sun, or intoxicated, especially after fatigue. Cold applied to the surface of the body, in whatever way, particularly after excessive exertion and imprudent exposure, will of itself produce an attack of fever, generally of the inflammatory or bilious inflammatory forms, according to the state of the individual at the time. But fever thus induced generally subsides under a judicious mode of cure, without evincing those

dangerous symptoms which characterise fevers chiefly resulting from the active agency of terrestrial exhalations.

In practice it will often be of great service to discriminate between the forms of continued fever, arising from fatigue, exposure to the sun, from cold and wet, and other occasional and accessory causes, and those forms which depend upon the exhalations from the soil for their origin, and in which fatigue, exposure, &c. are merely contingent and auxiliary circumstances. The former kind of fever is generally met with amongst recruits, and those addicted to excesses, and frequently is observed in situations where the influence of malaria cannot be suspected; the latter is readily referred to its source, and betrays its origin in the symptoms of exhaustion which supervene in its progress, and which are generally much greater than the previous excitement could alone generate; while in the former variety of fever the subsequent debility is not greater than vascular excitement usually produces.

Having thus pointed out the different types and forms of fever which are observed in warm climates, particularly in India, in order that the method of cure should be appropriately employed in this very important class of diseases, we shall not enter more fully into their history and progress. This does not seem to us necessary, as the symptoms always vary in particular cases, and even in each variety of a single type, according to the activity and number of the exciting causes, the predisposition of the patient, and the circumstances by which he may be influenced during the progress of the disease.

The most uniform stage of fever, if indeed it may be called a stage, is the period which more immediately precedes the breaking out of the febrile action, to the consideration of which we have devoted a section in the First Volume of the Work,* considering it of the utmost import-

* See Vol. I. p. 209.

ance to arrest disease at this period of its commencement; and knowing that it admits of arrest at this stage in a great many cases, and that, when it cannot be cut short, it will generally be rendered more mild in its subsequent stages.

The period of disease which we have described in the part alluded to, although characterised by symptoms of a distinct and definite kind, is not confined to any particular form or type of fever: indeed, it is often indicative of the approach of acute inflammation of some internal organ; and it, in many cases, marks the approach of cholera and dysentery. But it more uniformly indicates the presence of continued and remittent fevers, and points out to the attentive practitioner the period at which disease should be attacked, and, by means of the measures then adopted, control over its subsequent stages acquired.

After this incipient stage of disease, the symptoms vary, as we have already stated, in almost every case, according to the types and forms of fever now pointed out, and according to the complications which we shall have to notice in the sequel. Even in six cases labouring under the same type and form of fever,—we may say, for the purpose of illustration, the bilious remittent,—we shall find one with suffused eyes, violent headach, and irritability of the stomach, with bilious vomiting, as the most marked symptoms;—a second with a bilious and dysenteric state of the alvine evacuations; foul, loaded, dark tongue; extreme pain of the loins and limbs; quick, irritable pulse; and fulness of the hypochondria;—a third with tumefaction of the abdomen; scanty, bilious, and acrid evacuations; vomiting of dark-green and bilious matters; a yellow tint of the conjunctiva, breast, and belly; and obscure remissions of the febrile actions;—in a fourth, a harsh, mordant heat at the epigastrium and abdomen; watery perspirations on the face, hands, and legs; and morbid, pitchy state of the stools;—a fifth with great tenderness and sense of heat and pulsation at the epigastric region; quick respiration; oppression at the præcordia; constant irritability of the stomach and bowels; pain in the loins, eyes, and forehead;—and a sixth with pain at the right

hypochondrium; great depression of spirits; quick, irritable pulse; partial perspirations; foul, dry, and chapped tongue; scanty, dark-coloured urine; and foul, bilious, and acrid evacuations.

The state of the pulse, tongue, and alvine evacuations, although indicative of serious disease, is different in each of these cases. In some the pain is most remarkable in the loins and limbs; in others, in the forehead or occiput; and in many, tenderness, anxiety, and distress, are felt, remarkably at the epigastric region, where the heat of skin is generally great. The appearance of the countenance and surface of the body also varies in each case; and the same remark often holds good in respect of the intellectual functions. In some instances the remissions are obscure; in others, the exacerbation of all the symptoms is very marked. Many cases commence with evident rigors and horripilations, whilst others experience these symptoms in so slight a degree as scarcely to attract attention. In one case the paroxysms increase in severity until exhaustion of the powers of life, terminating in fatal collapse, takes place, preceded by symptoms of a more or less malignant or adynamic character; in another, the exacerbations gradually increase, until a critical or artificial evacuation reduces the violence of morbid action, and tends to restore the healthy functions of the organs; and in a third, the exacerbations become gradually diminished in severity until debility is the most marked symptom, and the functions of the vital organs are slowly restored, as the debility is removed by the treatment adopted.

In respect of the duration of the above types and forms of fever, little need be said. Intermittents and remittents are of extremely indefinite duration, the one being often converted into the other, according to the varying circumstances attendant upon particular cases. The more violent attacks of remittent and continued fevers may terminate in twenty-four hours, although usually extending from three to fourteen days; whilst the more mild forms may go on for a much longer period. But the duration of fevers in warm climates depends so much upon the various circumstances influencing the condition of the patient, that little can be said with precision on this point, as will more clearly appear from what we shall have to adduce hereafter,

respecting the conversions of the various types and forms of fevers, and the complications supervening in their progress. On which topics we shall now proceed to offer a few observations.

The *conversion* or transition of one type and form of fever into another is familiar to every experienced observer of disease within the tropics. To explain its causes and the circumstances which dispose to it, is, however, a matter attended with considerable difficulty. In many cases the conversion of one form of fever into another seems to result from the change of season, and vicissitudes of weather and temperature: in some instances, the mode of treatment appears to have considerable influence in promoting this interchange of type, even although it may not altogether occasion it.

But, in our opinion, the chief cause is to be found in the prevalence of the exciting cause of fever, and its operation on the frame of the patient during the time he is subjected to treatment, and also during his convalescence. This seems to us a very material matter,—one of paramount import in the treatment of intertropical diseases, as influencing both their progress, terminations, and issue, and deserving more particular notice on our part hereafter.

Intermittents often run into the remittent type, especially about the commencement of the hot season and of the monsoon; and this is particularly evident in cases which are characterised by considerable disorder of the stomach, bowels, and biliary organs. On the other hand, remittents not infrequently are changed into intermittents, especially about the time of approaching convalescence from the former; and this is observed to occur particularly in those who have experienced marked disorder of the spleen or liver during the progress of the remittent type of fever, and who have been exposed to the influence of malaria whilst under treatment. Occurrences of this nature seem to us to take place more frequently during the rainy and cold seasons than at any other.

Not only are intermittents changed into remittents, but the latter are also

converted into the continued type; and these changes may all supervene in the same individual, fever commencing in an intermittent form, and subsequently changing to the remittent, and lastly to the continued type. This series of changes seems to us to depend upon gradually increased disorder of the organs of digestion, especially the stomach, spleen, and liver, proceeding from the continued or even increased operation of those causes which originated the disease, and perhaps, in some cases, from the treatment adopted.

Continued fevers, especially those of the bilious inflammatory and more malignant forms, very frequently terminate in obstinate intermittents, which at first assume a quotidian, and subsequently a double tertian or quartan type. This is more particularly remarked in districts where the exhalations from the soil are abundant, and when the nights are chilly, foggy, and moist. Sometimes, also, continued fever passes into the remittent, and that into the intermittent form, under similar circumstances to the above. As in the former cases, this occurrence must chiefly be imputed to the influence of the external agents of fever upon the system during the progress of the treatment, and to the method of cure adopted during the early stages of the disease. This transition of one form of fever into another, as in the instances of change already adduced, is often referrible to lesion of some of the abdominal viscera, more especially to obstructions and enlargements of the liver or spleen, or of both these organs.

Not only do the various types of fever change into one another, especially when the patients continue exposed to the exciting causes of intertropical fevers, and when some of the abdominal viscera are seriously deranged in the progress of the disease; but one type of fever may vary its character, or assume a different form in its progress, owing to the continued operation of the causes in which it originated. Thus, quotidians, tertians, and quartans, may change into one another, or assume an irregular or complicated form. A mild or bilious remittent, also, may become malignant, or complicated with visceral disease; and continued fever may commence with all the characters of strong arterial excitement, presenting a predominance of morbid action in the liver and stomach, or in the bowels, or even in the head or lungs, and

suddenly assume a malignant or adynamic form. This sudden and great exhaustion of the energy of the system evidently depends upon more than one cause, and should be referred both to the collapse following morbidly excited vascular action, and to the continued operation of the exciting cause of disease on its victim during its progress.

That this sudden collapse of the powers of life is partly owing to the continued operation of the exciting causes of fever, is proved by the more favourable aspect which the disease assumes when the patient is conveyed beyond the sphere of action of those terrestrial exhalations which occasioned it, as when ships put to sea upon the appearance of fever amongst their crews, and after they have been exposed to the operation of its causes. Similar occurrences are also remarkable in various districts of intertropical countries, when the sick are removed from the reach of those causes which produced disease, or at least to situations where they exist in a less concentrated and dangerous form.

SECTION III.

Of the Complications and Terminations of the Fevers of Warm Climates, with the Appearances on the Examination of fatal Cases.

THE fevers of warm climates, especially as we have observed them in the eastern hemisphere, seldom go through their entire course without evincing a predominance of morbid action in some viscus or texture, most frequently in those seated in the abdominal cavity and in the cranium. In many cases, this increased disease is evinced in more than one organ, and is often extended to viscera situated far apart, and not intimately allied to one another either in function or by vascular connexion. We do not, however,

consider that the increased disease in certain localities ought to be viewed as the immediate cause of the febrile excitement, or, in other words, that fever is merely general disorder supervening to disease of a particular organ ; but, on the contrary, that the exciting causes of fever produce disorder of the frame generally, which, owing to the predisposed state of certain viscera or textures, occasions a prominent derangement of them ; and that if this superinduced disorder be allowed to proceed, it often aggravates the general fever, and rapidly terminates in organic lesion.

In the treatment of the majority of fevers in warm climates the chief danger is to be apprehended from the supervention of local mischief ; and when complications thus arise, our principal means must be directed to the preservation from organic lesion of the prominently disordered viscera. Hence the importance of detecting such complications at their commencement, and of employing suitable remedies for their removal as early as possible after their supervention.

Amongst the most early local affections which appear in the course of intertropical fevers, is an inflammatory state of the mucous surface of the stomach and duodenum. This is indicated by the nausea and irritability of the stomach ; by the sense of fulness, heat, and tenderness at the epigastric region ; and the foul, loaded tongue, with red sides and apex. In the progress of those fevers in which these are prominent symptoms, especially in the bilious remittent and bilious inflammatory continued fevers, and in many of those which assume characters of a malignant kind, the inflammatory state of this part of the digestive mucous surface exists in a more or less aggravated form, and not infrequently extends to the internal surface of the small intestines, and even, in some cases, to the large bowels.

This extension of the inflammatory action to the small intestines is indicated by tumefaction and tenderness of the abdomen to pressure made about the umbilicus, by a sense of inward soreness or heat in this situation, and by an irregular state of the functions of the bowels, attended with occasional sickness, and a frequent, scanty state of the alvine discharges, approaching

to diarrhœa, and sometimes to an intermediate state between diarrhœa and dysentery.

If the affection of the mucous surface extends to the large bowels, then the dysenteric symptoms become more fully marked, the stools have a still more morbid appearance, frequently with tenesmus, but the evacuations are not always tinged with blood. In these cases, upon an attentive examination of the patient's abdomen, tenderness and soreness are often complained of in the course of the colon, and frequently in the cæcum.

The affection of the mucous surface of the stomach and small intestines often supervenes in the earlier periods of fevers, that of the large bowels occasioning dysenteric symptoms in the more advanced stages; and thus it not infrequently happens that fevers, especially those occurring in unhealthy situations, and where the patients are exposed to the chilling cold and dews of the night, or even to the raw night-air merely, run into dysentery of a very dangerous form.

The supervention of the complications now adduced in the progress of many fevers in warm climates, generally is owing to the irruption of an acrid or irritating bile into the duodenum and stomach, and to the excitement which this fluid occasions as it passes along the alimentary canal. Much also is owing to the accumulation of morbid secretions upon the internal surface of the small and large intestines. These secretions seem to undergo some change, rendering them more irritating to the surface which they cover; and this change is evidently the greater, as the effects thereby produced are so much the more marked, the longer they have been retained in the *prima via*, owing to a costive or neglected state of the alvine functions.

The very remarkable effects proceeding from the accumulation and retention of morbid secretions and fæcal matters in the large bowels have been already insisted upon in a former part of this Volume,* and their influence in

* See p. 47.

occasioning dysentery and various other ailments fully shewn. If, therefore, such results proceed from these accumulations during health, how much more likely are they to supervene, even in aggravated forms, in the progress of fevers? That they do supervene, and produce increased mischief, under such circumstances, experience shews us, and, moreover, demonstrates that they seldom or ever appear when the accumulation and retention of the fæcal and morbid matters which occasion them are prevented by suitable means adopted early in the disease, and repeated during its progress, as the circumstances characterising particular cases point out.

The accumulation of fæcal matters in the large bowels during fever is so obviously productive of disease in these viscera, that we are surprised that more attention has not been drawn to the circumstance by modern writers. During fevers, all the secretions, particularly those which are retained in the body for any time after their production, undergo very great changes, and are rendered more irritating or otherwise injurious to the surfaces with which they come in contact. Hence those secretions which are excrementitious, and which, from their hurtful tendency when retained, require to be removed from the system, being allowed to remain and accumulate in the large bowels, irritate the internal surface of these viscera, and this irritation, either from its long duration or repetition, excites inflammatory action, which becomes the prominent state of disease, and thus idiopathic fever is converted into dysentery, either of an acute, sub-acute, or chronic kind, according to the activity of the inflammatory action, and condition of the patient. If the liver has been affected during the progress of fever, as we shall soon see is frequently the case, the morbid secretion proceeding from this organ still further assists in the production of the dysenteric affection, and perpetuates it when produced, rendering this affection in every respect identical with that complication of dysentery which we have already described, under the head of Hepatic Dysentery, in a former part of this Work.

The next frequent complications, if not the most frequent, which supervene in the course of fevers, are affections and lesions of the liver.

There will seldom be observed, in warm climates, especially in the eastern hemisphere, a single case of fever, of whatever type, in which the functions of the liver are not more or less deranged. This derangement presents, in different subjects, and even in the same subject at different stages of the disease, every variety of form. In many, the biliary secretion is morbidly increased; in a few, it is diminished; in others, it seems to accumulate in the hepatic ducts or in the gall-bladder, or in both, and afterwards to be let loose, occasioning marked disorder in the stomach and intestinal canal; and in almost every case, whether it be secreted in excess or in diminished quantity, it is evidently of a morbid quality, as respects its effects upon the alimentary tube, or its appearance in the evacuations.

This morbid state of function exists more or less in all the forms and types of fevers, and in many from their earliest stages, although it becomes more manifest in their progress, when the structure of the liver is often also deranged. Disease of the liver, as respects both its functions and organisation, thus becomes a very frequent complication in intertropical fevers, in some in their early stages, in others not until their advanced periods. In some types and forms of fever, the complication is general; in others, it is only occasional, although of frequent occurrence.

It would be satisfactory to know, if the knowledge could be obtained with precision, what are the lesions existing in the liver during the progress of fevers, while the patient is yet alive, and in a state to benefit by our knowledge. What these lesions are at the time of death, *post-mortem* examinations have satisfactorily informed us. These, in the great majority of cases, are seated in the parenchymatous structure of the viscus, and are often of a kind which betray themselves, during the existence of fever, by no precise or prominent symptom, unless they are such as occasion great enlargement of the organ, so as to render it susceptible of detection on a careful examination of the patient.

We have reason, however, to suppose that the affection of the liver in fever, at first consists merely of simple congestion of the portal vessels and

hepatic veins, sometimes accompanied with accumulations of bile in the hepatic ducts and gall-bladder. This state often occasions excitement, or is complicated with it in some degree, and is succeeded by increased determination of blood to this viscus in some cases, and by inflammatory action of its internal structure in others, giving rise to those lesions which are observed upon the examination of fatal cases, and to which we shall soon have occasion to direct attention.

Functional derangements of the liver are common in all cases of fever, as we have already stated, in some one of their stages, and in many from their earliest periods. This is particularly observed in respect of those forms of fever which, from the prominent nature of the complication, have been denominated bilious, and which, owing to the concentration of the exciting cause and the predisposition of the patient, assume either an intermittent, remittent, or continued type. In these forms of fever, organic lesion of the liver often follows closely upon the functional disorder, if indeed the disordered function be not the consequence of organic change in its earlier stages. In the other forms of fevers, the functional disorder of the biliary apparatus is often not so soon evident, or it does not become a prominent feature so early in the disease; yet it may nevertheless exist to some extent, and may even be associated with, or proceed from, organic change of the structure of the organ in its early progress: for disease of the liver is often detected after death in cases of idiopathic fever, where it was not suspected to exist during the life of the patient.

When the liver becomes organically changed in the course of fevers, the external or serous surfaces, which are the most sensible parts, are seldom much affected; and when the lesions of structure are not accompanied with great enlargement of the viscus, or a remarkable state of deranged secretion, their existence during the progress of the fever is not easily detected. The difficulty of ascertaining the presence of many of the organic changes to which the liver is liable, is confessedly great, when these changes supervene primarily; but the difficulty is much increased when they arise in the progress of inter-tropical fevers.

The observations which we offered on the subject of hepatic diseases in our First Volume, will be found of some aid to the inexperienced practitioner in detecting this very important form of complication, and in ascertaining its precise nature. In addition to what we have stated at that place, we may mention, that a sallow, muddied appearance of the countenance; a harsh and dusky state of the surface, with a yellowish tinge; fulness, tenderness, or soreness of the right hypochondrium and epigastric region, with pain in the right shoulder or shoulder-blade; bilious vomitings; a morbid and bilious state of the alvine evacuations; pains in the orbits, forehead, loins, and limbs, &c. &c., should warn the physician that the structure as well as the functions of the liver may be in a state of lesion.

In the more protracted cases of intermittent fever, especially those of the double tertian or quartan type, the liver frequently becomes enlarged in size, and its substance congested, with obstructed circulation through its blood-vessels and biliary ducts. This derangement is often accompanied also with enlargement of the spleen, and a tuberculated state of the pancreas. In some cases of intermittents, especially such as are accompanied with symptoms of the adynamic state of system, the liver is not only congested, but softened in its structure; but this lesion can only be inferred during the life of the patient.

In the remittent forms of fever, both functional and organic disease of the liver is very generally present. Congestions, enlargement, and inflammation, not infrequently supervene, especially in the bilious and bilious inflammatory forms of this type. Occasionally, purulent collections also form in the substance of the viscus; but they are seldom evinced by sufficiently precise or uniform symptoms beyond those already enumerated, by which the practitioner may be enabled to guide his prognosis and treatment. The symptoms of diseased structure only of the organ are furnished; the precise nature of the organic change can seldom be disclosed to him until inspection after death furnishes the information. When purulent collections form in the liver during the progress of remittents, rigors or horripilations are not uniformly present; and when they occur, they are often mistaken for the

commencement of the febrile exacerbation. The signs adduced above, followed by night-sweats, diarrhœa, and a morbid state of the alvine evacuations, tumefaction of the right hypochondrium and epigastrium, &c., are amongst the most prominent symptoms which are usually remarked.

The continued forms of fever are also often complicated with disease of the liver. In the inflammatory and bilious inflammatory form of this type, the substance of the liver very frequently suffers from active vascular excitement; and this excitement often passes into a state of inflammation, of a more or less active kind, which, in its progress, produces the various organic changes to which the parenchymatous structure of the organ is liable. Thus enlargements, softening, induration, obstructions, tubercular formations, and abscesses, form in its substance, according to the activity of the vascular action, the habit and temperament of the patient, and the state of function of the organ at the time when fever commenced. But these kinds of organic change are not limited to the continued forms of fever; they also supervene in the course of fevers of the remittent types.

In the malignant or adynamic forms of fever, whether presenting the continued or the remittent types, softening of the liver often takes place; and although it can seldom be recognised with precision during the course of the disease, unless it be associated, as it very often is, with congestion, enlargement of the viscus, and a morbid state of the biliary secretion, it is one of the most dangerous lesions to which the organ is liable. We have often found it upon dissection of those cases which presented much tenderness and tumefaction of the hypochondrium and epigastric region; great anxiety; urgent thirst; sense of burning, with great heat at the epigastrium; dark-coloured and loaded state of the tongue; weak and quick pulse; and a morbid, offensive state of the alvine evacuations, with vomiting of dark grumous matters. Whether this softening results from the excessive vascular action to which the liver has been subject, or proceeds from the noxious influence of the cause of fever upon the vitality and tone of the frame generally, and of the liver in particular, or to both these causes, we shall not take upon ourselves to decide. It is probable, however, that both

circumstances have a considerable share in the production of this species of organic change, as well as several others of a similar nature, which we shall have to notice hereafter.*

The spleen very often becomes diseased during the course of fevers, especially in protracted cases of agues, or when remittents and the continued type of fever run into the intermittent form. Enlargements of this viscus, of an indolent or passive kind, and occasionally enlargements associated with pain and tenderness in the region of the spleen, are very frequent in all cases of protracted fever occurring in low, marshy, or thickly-wooded situations. This complication is of more frequent occurrence in the northern and higher districts of India than in the southern provinces. Sometimes the enlargement is accompanied with signs of considerable inflammatory action in the surfaces of this viscus, as indicated by acute pain and tenderness to the touch; but in the majority of cases, the enlargement, although present to a great extent, is attended with little uneasiness, or even soreness upon pressure. In some cases, the affection of the spleen does not make its appearance until convalescence from the fever has commenced. This is most frequently remarked in the remittent and continued types of fever; and when observed to supervene in them, either at this time or in their far advanced stages, there is generally much risk of the disease being about to assume the intermittent type.

The complication of affections of the spleen with fevers is most prevalent in the old European residents in the climate. It is also not infrequent amongst natives, particularly among those who have migrated from the higher and more northerly provinces of India to the low, swampy, and wooded districts on the mouths and banks of rivers, and on the sea-coast, especially during the rainy and cold seasons. The complication also of

* In cases of enlargement of the liver or spleen, occurring in fevers, and when, from the circumstances alluded to above, we conceive that softening of these viscera may be present, or associated with enlargement, the practitioner ought to be cautious in his examination of the seat of disease: for if it be made forcibly or roughly, serious injury may be occasioned, and less information thereby obtained than if it were directed with caution and experienced tact.

structural disease of the liver with fever is most common among those who have passed some time within the tropics, and who are addicted to the abuse of spirituous liquors; while among more recent visitors of a warm climate, functional disorders and acute inflammations of the viscus are not infrequently observed to take place in the course of the continued and remittent types of fever, especially those which assume an inflammatory or a bilious form.

Although diseases of the pancreas occasionally are observed upon the *post-mortem* examination of fatal cases of fever, and most probably supervene in the progress of the disease, yet we have no means upon which we can depend of detecting their existence during life. They may, however, be inferred to be present by the observing and experienced practitioner, from the supervention of a watery diarrhœa, with a ropy, light-coloured fluid in the stools; from pain in the epigastric region and across the back, particularly between the loins and shoulder-blades, with sickness at stomach. In several fatal cases of fever, in which we found, upon examination, enlargement of the pancreas, with irregular steatomatous tumours in its structure, there was also present during life a yellow tinge of the surface of the body conjoined with the above symptoms, the common biliary duct being obstructed, from the pressure of the tumours of the pancreas; the gall-bladder filled with a thick, viscid, and dark-coloured bile; and the liver of a deep colour, and congested both in respect of its blood-vessels and bile-ducts.

Determination of blood to the head, producing inflammation of the substance or coverings of the brain, with delirium, coma, &c. very frequently supervenes in the course of the inflammatory forms of the continued and remittent types of fever. It is generally remarked to take place in those who have exposed themselves to the rays of the sun, especially when in a state of intoxication, and amongst soldiers subjected to great exertion and fatigue during high states of atmospherical temperature, or under a burning sun. In many of such cases it is extremely difficult to decide whether or no the disease is purely phrenitis, or idiopathic fever; but in most instances the cerebral symptoms are distinctly posterior to the full develop-

ment of the febrile disease, and hence are to be considered as resulting from the general febrile excitement, owing to the predisposed state of the organ, induced by the circumstances now alluded to, the exciting causes of the fever being anterior to those accessory causes occasioning the marked determination of the circulating fluid to the head.

The affection of the brain and its membranes is common in the course of fevers occurring amongst recruits and recent visitors to warm climates. It is very frequently observed amongst this class of Europeans at Madras, where the atmospheric temperature is extremely high; and the febrile attacks, during which this symptom is so well marked, are there more to be imputed to exposure to the sun and to the high range of temperature, especially amongst the class of persons now alluded to, than to any exhalation which may proceed from the soil. Fevers in which the cerebral symptoms become prominently marked in their course, are generally most numerous during the hot season, and frequently occur in the parched districts in the southern provinces of the Indian peninsula. In many cases of fever thus complicated, whether of the continued or of the remittent type, the more marked symptoms of cerebral excitement and increased vascular action in the brain are superseded by stupor, coma, low delirium, and many of the typhoid or adynamic symptoms which characterise the worst forms of typhus in a temperate climate; but without any signs of the disease being possessed of infectious properties.

Symptoms indicating great lesion of the functions of the brain frequently appear also in the course of the more malignant forms of continued and remittent fevers. These are sometimes characterised by excitement, but in the earliest stages of the disease only; the increased action being soon followed by exhaustion, either owing to the previous morbid excitement, or to the continued influence of the exciting cause of the disease upon the nervous energy of the frame. In other cases, the excitement is never fully developed, a great want of the energies of the mind being evident throughout, with stupor and indifference to all external objects and to the issue of the disease, sometimes with a strong indisposition on the part of the patient to the use of

the requisite remedies. In cases of this description, the exciting causes of the disease have destroyed the vital energy of the frame, so far as to render it incapable of any satisfactory effort at re-action, and the functions of the brain and nervous system either sink gradually with the other corporeal functions, or at last rally so far, after repeated efforts, assisted by the powers of art, as to bring about a return to healthy action.

In some of the warm countries which are situate near to, or without, the tropics, or in those which have great elevation above the level of the sea, as the more northerly provinces of India, and many places in the western hemisphere, pulmonary affections not infrequently supervene to, or accompany, the prevailing form of fever, especially during the cold and rainy seasons. The pulmonary disease in some individuals is so great as to amount to inflammation of the lungs, and to occasion all the consequences which usually follow this malady. In other cases it consists chiefly of bronchitis, and in many of simple catarrh. In the more southerly provinces of India this form of complication is seldom met with in fever.

Rheumatism sometimes appears in the course of fevers, especially during the progress of the intermittent and remittent types. This complication is most frequent in the highly elevated districts and northern provinces of Hindostan, and is generally the consequence of exposure to partial currents of cold or damp air during perspiration, and is frequently dependent upon accumulations of morbid bile on the biliary apparatus and alimentary canal, or other derangements of the biliary and digestive organs. This complication is very frequent amongst the natives of the climate and the old European residents. In the former the rheumatic attack very frequently supervenes to the decline of the fever, or during convalescence from it.

Erysipelas not infrequently makes its appearance in those who are subject to it, or it supervenes to some scratch or sore, during the course of remittents or intermittents of an adynamic or malignant form. This occurrence is most frequently observed to take place in the more marshy and unwholesome

situations near the mouths and banks of rivers, and in thickly wooded districts, where the exhalations are most noxious. It is also favoured by the rainy and cold seasons, when these exhalations generally are most concentrated and deleterious. Under similar circumstances to these, not only do sores, scratches, or wounds, readily assume an erysipelatous character, but this latter betrays a strong disposition, particularly in hospitals, to run into a gangrenous form. This complication, and the consequences to which it is liable, under the above circumstances, have been very frequently presented to our observation in various districts in India, and particularly during the expedition to Batavia in 1811.

Amongst the natives, ulcers and sores on the lower extremities are very frequent; and, during the progress of intermittents and remittents, frequently assume a foul and obstinate character. Both erysipelas and external sores are aggravated by marsh exhalations, and are not infrequently complicated with the periodical forms of fever. The continued type of fever is seldom or ever observed in those who are affected with these local ailments. It would seem as if the state of constitution accompanying them, or upon which they depend, were incapable of experiencing fever in its continued type, although readily assuming the periodical form.

In those low districts of country within the tropics where marsh exhalations are most abundant and concentrated, especially during the rainy and cold seasons, almost all diseases assume an intermittent or remittent form, in a more or less marked degree; and the characters even of the most inflammatory are often changed to the low or adynamic state, requiring a very different method of cure from that which is found most beneficial during the dry and hot season, or in dry and elevated situations placed beyond the sphere of action of the marsh exhalations.

Having now pointed out the most usual complications and forms which fevers assume in warm climates, particularly in the eastern hemisphere, in order that the inexperienced practitioner should be prepared to meet them, and indeed to look for the first indications of their supervention; and that we

may hereafter assign, with greater precision, to the different states of this class of diseases the various remedies and methods of cure which each requires, we shall next offer some remarks on the various lesions which we have remarked upon the examination of fatal cases of fever occurring in warm countries.

Organic Changes observed in the Examination of fatal Cases of Intertropical Fevers.—In order to observe with accuracy the extent and nature of the various lesions induced in the different structures of the body by the fevers of warm climates, and which are to be viewed as the consequences of the disease, the examination should be made as soon as possible after death, generally within a very few hours of that event. If this be not attended to, and many hours be allowed to elapse, especially during hot seasons and in unwholesome situations, many of the appearances which will be observed will be more the consequences of death than of the disease.

In the bilious and malignant forms of fever, the surface of the body frequently presents a discoloured appearance. It is generally of a yellowish tint, or of a yellowish green. Sometimes an ichorous fluid escapes from the mouth and nostrils. In the other forms of fever the external surface is not often remarkably altered in appearance.

Upon opening the head, the membranes of the brain are frequently observed more vascular than usual. Sometimes the arachnoid is opaque, and a clear or slightly yellowish serum is found between the membranes and in the ventricles of the brain. The substance of the brain, when divided, often betrays increased vascularity, by the number of bloody points observed in the divided surface; in some cases it is softer than natural, and in others it is firmer. In the inflammatory forms of fever, and where the cerebral determination is great, the above appearances are more strongly marked. In the adynamic or malignant forms, the most uniform and prominent lesions of this part of the body are great congestion or engorgement of the veins and sinuses of the head, and sometimes effusion of serum between the membranes or within the ventricles of the brain.

The thoracic viscera seldom betray marked signs of disease, unless in those forms of fever in which pulmonary affections had supervened in its progress, or which were accompanied with this local derangement. In such cases, portions of the lungs have been found hepatised, and the bronchia loaded with mucous or muco-purulent matter, and the mucous-membrane lining of the air-passages inflamed in patches. In scrofulous subjects and those of a phthisical tendency, tubercles, in their various states, have been detected in the substance of the lungs.

The heart generally presents few marks of disease. The right cavities are often greatly loaded with blood, and the pericardium sometimes contains a little serum. In the more malignant and adynamic forms of fever, the substance of the heart frequently seems much softer than natural. In cases of this description, the blood in the right auricle is often semifluid and of a very dark colour; and the pericardium often contains a considerable quantity of a turbid serum or of a sanguineous fluid. Effusions of serum are sometimes observed in the cavities of the chest, especially in those who have died of the remittent or intermittent types of fever.

In some of the more protracted cases of ague, especially when complicated with organic disease of the liver or spleen, dropsical effusions into the shut cavities of the body are not an infrequent consequence; and in such cases the effusion into the cavities of the thorax is often very considerable. When the patient dies of the cold stage of ague, which rarely happens, the lungs are usually greatly congested with dark-coloured blood, as well as the auricles of the heart, especially that of the right side: the veins and sinuses of the brain are also engorged with black blood. In all cases of this description, the circulating fluid seems not to have undergone its usual changes in the lungs to the full extent, for a short time before death, as even the blood which is found in the arterial trunks is of a darker colour than natural.

Upon opening the abdomen, the viscera contained in this cavity almost always present marks of disease. But these are not confined to a single

organ, nor are they of a uniform character. Many of these morbid appearances have been alluded to in our remarks upon the local affections which arise in the course of fever.

The stomach is frequently found distended with flatus, and its internal surface and tunics, especially in the situation of the spleen, are often inflamed; congested, in a few cases ulcerated, and occasionally of a purple hue. In short, this viscus presents nearly the same appearances, especially as respects its mucous surface, as have already been described by us when treating of the inflammatory diseases to which it is subject.* Lesions of the stomach, particularly in its internal surface, are most frequently met with in the bilious and malignant forms of fever, or in those cases of the inflammatory kind which have run into the adynamic or malignant form.

The spleen presents also lesions in every respect similar to those already described at pages 3 and 4 of the present Volume. These lesions are chiefly observed in fatal cases of protracted ague and remittent fever, or when fever of the continued type runs into these forms, and ultimately proves fatal. In the more malignant kinds of fever, the spleen is often observed enlarged and uncommonly softened, so as to resemble a semifluid or gelatinous mass. In some of the more inflammatory kinds of fever, the surface of the spleen has been found inflamed and thickened, and even adherent to the stomach or to the abdominal parietes. In fatal cases of ague it is generally much enlarged; sometimes softer, at other times harder, than natural; occasionally tuberculated; and not infrequently it contains hydatid-like bodies. In some cases of ague and fever, terminating fatally in the cold stage, the spleen has been found uncommonly engorged with blood; and in a few cases we have found it ruptured, and an immense quantity of blood effused in the abdominal cavity. Morbid appearances of the spleen are most frequently found in the fevers of low marshy situations, on the banks or mouths of rivers, and in the more northerly districts of India; or in those places in which malaria is most concentrated.

* See Vol. I. p. 265 *et seq.* and p. 282 *et seq.*

The liver seldom is found, upon examination of fatal cases of fever, without some mark of disease. Indeed, some one or more of the various morbid appearances so fully described in our First Volume, where the diseases of the liver and biliary apparatus are discussed, is generally observed in these cases; but it is chiefly the internal structure of the liver which presents signs of disease. The surfaces of the organ are much less frequently affected, and seldom to so dangerous an extent, as its parenchymatous texture. In agues and remittents, enlargements of the viscus, with tubercular formations in it, are not infrequent. Congestion of the organ, as respects both its blood-vessels and biliary ducts, is very frequently remarked; and in the more inflammatory and bilious forms of fever, not only are these sets of vessels congested, but signs also of greatly increased arterial action are present, sometimes extending to some part of the surface of the viscus, and producing adhesions between it and an adjoining organ or surface. Occasionally, purulent collections, or even large abscesses, accompany the foregoing lesions; and, in a few instances, these latter have opened in some one of the situations enumerated where we treated of abscess of the liver in the First Volume.

In the more malignant forms of fever, and in many of the cases of the inflammatory and bilious kinds which terminate with adynamic and malignant symptoms, the liver is found of various shades of colour, from a pink to a purple or blackish hue, much softer in its texture, and varying in bulk, being in some few cases rather smaller than natural, but in the majority of instances greatly enlarged, as well as softened in its texture. In fatal cases of these varieties of fever, a deeper shade of colour, with considerable venous congestion and enlargement, generally is associated with softening of the internal structure of the viscus.

Morbid appearances of the liver are observed most frequently in fatal cases of the inflammatory and bilious inflammatory forms of fever: they are also very often found in agues, and in those cases, of whatever type, which degenerate into the malignant form. Lesions of the liver, in fevers, are often associated with disease of the stomach, bowels, and spleen, especially about that part of the stomach adjoining the spleen.

Marks of disease of the small and large intestines are generally confined to their internal tunics. The duodenum, jejunum, and ilium, especially the duodenum and termination of the ilium, very frequently are diseased in their mucous surface, which is inflamed in patches, sometimes covered with a mucopurulent secretion, and studded with small ulcerations, particularly the termination of the ilium. Occasionally, the mucous surface is of a brick-red or purplish shade of colour, apparently ecchymosed, and covered with a bloody sanies, and readily detached from the subjacent texture. In several cases, the ulcerations, which sometimes are large and far apart, at other times small and agglomerated, especially the former, have nearly penetrated the tunics of the intestines, and, in a very few cases, we have observed this occurrence actually to have supervened, the contents of the bowels being partly effused into the peritoneal cavity, and having produced peritonitis.

Such are the most frequent organic lesions remarked by us in the small intestines. Their tunics, both external and internal, frequently present very various shades of colour, and, in some places, are obviously tinted by the bile which has exuded from the gall-bladder after death, or by that which has flowed into the duodenum during the last hours of life. Besides these appearances, inflation of the small intestines, great constriction of their diameter, and all the other lesions described when treating of inflammation of the small intestines,* have been occasionally remarked by us during the examination of fatal cases of fever.

Morbid appearances of the small intestines are generally found in fatal cases of fever which were attended with bilious characters, and were afterwards distinguished by the supervention of diarrhoea and dysentery. They are most frequently seen in the remittent and continued types of fever, and often in those cases which assumed in their progress an adynamic or malignant form.

Amongst the most frequent organic changes observed in examinations of

*. See p. 24 of this Volume, *et seq.*

fatal cases of intertropical fevers, are derangements of the internal surface of the large bowels. These derangements are uniformly remarked in those cases of fever which are attended with dysenteric symptoms in their course, and consist chiefly of ulcerations, generally of the same kind as already described by us when treating of dysentery, and of the lesions characterising the chronic forms of this disease. To the observations offered at these places we beg to refer our readers.

When the ulcerations penetrate the coats of the bowel, as sometimes is observed, its contents are generally effused into the peritoneal cavity; for adhesions of the opposite surfaces of the peritoneum less frequently take place in the dysentery which is complicated with fever, than in the form of dysentery which is unattended with idiopathic fever, or rather, which is not preceded by it, and which, on that account, and owing to the very acute and inflammatory nature of the disease, has been, with great propriety, denominated colonitis, or inflammation of the colon.

Marks of inflammatory action are occasionally met with in the peritoneum, omentum, and mesentery, in all the forms of fever; and in protracted cases of the remittent and intermittent types, especially those in which the liver and spleen have been obstructed or otherwise diseased, considerable effusions of a serous fluid into the cavity of the abdomen are not uncommon. In these cases, the peritoneum presents either a sodden appearance, or congestion of the veins. In many of those cases, also, the mesenteric glands are enlarged, of a light colour, and hard consistence. Diseased appearances of the mesenteric glands are not associated alone with the dropsical effusions, as we have frequently observed them when no such effusion was present, and when the mucous surface of the bowels was diseased, and the liver and spleen enlarged, and otherwise changed in structure.

Such are the most frequent lesions which have occurred to our inquiries into the pathology of intertropical fevers. Others not enumerated nor referred to may be occasionally remarked; but we are not aware of having

omitted any of importance as being calculated to throw light on the nature of this very interesting class of diseases, or as requiring means of cure different from what are appropriate to those particularised above.

SECTION IV.

*Cursory Remarks on the Prognostic Symptoms of Intertropical Fevers,
particularly as occurring in the Eastern Hemisphere.*

THE occurrence of convulsion during the paroxysms of ague should always be considered as an unfavourable symptom, especially when conjoined with anticipation of the period at which the paroxysm usually comes on. Tertians are most frequently liable to present anticipations of the paroxysms, and complications with convulsion. Quartans are generally the most protracted form of this type of fever, and most surely lead to the production of organic disease. Retardation of the period at which the paroxysm usually supervenes is to be considered in a favourable point of view, and sometimes indicates a disposition to crisis.

Complicated and irregular forms of ague generally indicate a more serious and intractable disease, and danger of visceral complication, if, indeed, such complication does not actually exist and occasion the irregularity which the disease has assumed. When, also, the paroxysms of intermittents terminate without sweats or other evacuations, as purging, vomiting, &c., the existence of serious visceral disease, generally amounting to organic lesion, more especially if the paroxysms be followed by indistinct or imperfect intermissions, should be anticipated. If the intermissions are complete, and the absence of fever perfect, immunity from visceral lesion, and a favourable issue, may be expected.

The state of the *countenance* affords the observing practitioner many of his chief indications of the probable issue of febrile diseases. When the expression of the face is serene, confident, clear, and animated, the disease may be considered as of a mild character, at least void of malignancy or sinking of the powers of life. When this state of countenance is observed to take place in the advanced stages of fever, it may be considered as the indication of a favourable crisis. If the face is large, injected, of a deep crimson or dark colour, with prominence of the eyes, and distress or an expression of anxiety, in the first stages of fever, the increased excitement and determination to the head occasioning this appearance may be viewed as speedily leading to exhaustion of the powers of life; and if these signs supervene in the advanced stages of the disease, a fatal collapse or approaching malignancy may be dreaded. Whenever the countenance expresses anxiety and distress, especially when it is also tinged of a yellowish hue, with constriction of the features, and want of serenity and confidence in the expression, extreme danger may be apprehended.

A full, bloated, waxy, or livid state of countenance, especially if it assume a tawny or mahogany tinge, indicates very dangerous congestion, and often approaching death. A similar remark applies to a withered-like or collapsed state of the features, with an appearance of agitation and distress.

The condition of the *external surface* of the body also affords an important source of information to the practitioner, as to the probable issue of the disease. If the skin be soft and perfect in its sensibility, its heat not excessive, although augmented, but without an unpleasant feeling of burning, and if the increased temperature be equally diffused to the extremities, a favourable attack may be looked for. When, on the contrary, the skin is dry and harsh, as if thickened, with an ardent, caustic, or unnatural heat; if it be dark, livid, or otherwise tinged or changed from its natural hue; if it be little sensible, not readily raised into vesications by the application of blisters, or if the vesicated surface assume a black or dark hue; if the heat be ardent in the head and trunk, particularly at the epigastrium, and diminished in the extremities; if the skin be thickened,

apparently withered, dusky, flaccid, or yellowish; if it be torpid, tawny, streaked of varying shades; if it be damp, greasy, puffy, or bloated,—the danger should be considered great.

When the *perspirations* are warm, fluid, general, and copious, accompanied with an open or free pulse, a favourable issue may be expected. On the other hand, if the perspiration be cold, clammy, scanty, or partial, with a nauseous or disagreeable odour, especially if the pulse at the same time be weak, small, frequent, and oppressed,—danger is to be anticipated.

The supervention of erythematic or erysipelatous inflammation in the seat of sores or abrasions of the cuticle, the breaking-out of old ulcers, or a foul, gangrenous appearance of such sores as previously existed, denote failing energy of the powers of life, and a tendency to dissolution in the textures.

The *pulse* is amongst the most important sources of information in fevers. If it be under one hundred or one hundred and ten, at the same time free, energetic, and regular, the fever may be considered as mild and tractable. On the contrary, if the pulse rise above this standard; if it become also irregular, tumultuous, or oppressed, especially in the latter stages of disease, then considerable danger is to be apprehended. Great frequency, with intermissions, smallness, weakness, irregularity, starting, &c. also denote extreme danger. If the pulse, from being frequent, becomes less so, and more free, expanded, and soft, a favourable change may be hoped for; and if it also intermit every fifth or sixth stroke, the supervention of crisis may be expected.

On the accession of the paroxysms of fever, the *respiration* is generally frequent and irregular, and then this state of function is attended with no unfavourable indication. But when an irregular and frequent state of respiration is observed in the course, or during the advanced progress of fevers, considerable danger is evinced, especially if this state is accompanied with a sense of constriction or oppression, or when the breathing is particularly short, hurried, difficult, and laborious. A still, quiet state of respi-

ration, the motion of the thorax being scarcely perceptible, also indicates danger, especially when accompanied with symptoms of stupor or torpor, and other signs of malignant or adynamic disease. A slower state of respiration than natural, occasionally interrupted with deep sighs, or convulsive heavings of the chest, is also a very unfavourable symptom, especially in the lower forms of continued and remittent fevers. A cold, raw state of the patient's breath, especially if accompanied with an offensive, fishy odour, indicates a malignant state of disease, and approaching dissolution.

The appearance of the *tongue* and *mouth* is one of the best guides which is furnished us in ascertaining the states of the internal viscera, particularly those lodged in the abdomen, during the progress of fever. In the course of the mild or less dangerous forms of fever, the tongue is generally foul, coated with a yellowish or cream-coloured mucus; sometimes a little red at the sides and apex, and rather dry, or moderately moist in the centre. In proportion as it departs from this state, the severity or danger of the disease may be anticipated.

If the tongue be covered with a milky, mealy, and whitish coating, and if it be at the same time large, flabby, or swollen, an adynamic or malignant state of disease may be expected. If it be rough, dark-coloured, with prominent papillæ, and not particularly coated, but red, or brick-red, especially towards the sides, inflammation may be dreaded in the alimentary canal, or in the structure of the liver, especially if at the same time the patient complains of tenderness, or a sense of burning at the epigastric region; and if, in addition to these signs, there be a sensation of caustic heat at the region of the stomach, with anxiety, diminished temperature of the extremities, and laborious respiration, the internal visceral disease may be considered as being far advanced, and collapse of the powers of life near at hand.

When the tongue is white or coated, with the papillæ erect or excited, and the edges red and fiery, we may consider that great vascular excitement is going forward in some internal organ, or in some parenchymatous structure, although no other symptom, not even the state of the pulse,

should indicate it, and that vascular depletions are required. When the tongue is covered with a deep-yellow coating, congestions of bile in the liver and gall-bladder are evinced; and if this appearance pass rapidly into an excited, dry, and brownish state, the supervention of inflammatory action in the substance of the viscus, with increase of the febrile action, and diminished nervous energy, is thereby indicated. A dark or brick-coloured redness of the tongue, with a glossy surface, partially covered with a half-detached coating, and a dark, scanty, and tenacious mucus in the mouth, shew considerable danger, and a tendency to symptoms of a malignant or adynamic kind.

A leaden, sodden, parboiled, flaccid, smooth, enlarged, tremulous, or diminished size of the tongue, are all unfavourable symptoms in fever. If it become, in the progress of disease, thickly covered with a black, fuliginous coating, or exhibit, in addition, deep fissures or rents, the apex and sides being of a brownish or dark colour, an adynamic state of system may be considered as fully formed, and the mucous surface of the alimentary canal as being in a state readily convertible into sphacelation. The disease should be viewed as being in a still more malignant state, and dissolution approaching, if the gums readily bleed when touched, if they and the teeth are covered with a black, viscid mucus, if the former discharge an ichorous or bloody sanies, or if an ichorous fluid escape from the nostrils or posterior fauces. An inky state of the surface of the tongue sometimes ushers in the foregoing symptoms, and indicates the commencement of the malignant form of disease.

Thirst is always great in intertropical fevers; sometimes it is insatiable. This symptom is not of itself indicative of great danger. The absence of thirst, especially when the tongue and fauces are dry, rough, and parched, is always an unfavourable sign. A constant desire of drink, yet the patient drinking little when it is furnished to him, is also an unfavourable symptom.

Nausea and *vomiting* accompany nearly all intertropical fevers. In some cases, nausea, especially when long continued, is a more unfavourable sign

than full and free vomiting. The discharge of large quantities of yellow bile is very frequent, especially in the bilious and inflammatory forms of fever; but, although indicating great violence of disease, it does not portend of itself an unfavourable termination. When, however, the discharge from the stomach is very ropy, flaky, and viscid, when its colour is various, as green, yellow, and dark green, a dangerous form of fever may be dreaded; and the supervention of black, or coffee-ground, or dark grumous vomitings is to be feared. In some cases of the worst forms of fevers, especially during their advanced stages, the quantity of matters thrown off the stomach is extremely great, and far exceeding the bulk of the fluids received into the organ.

Singultus often accompanies the irritable and diseased state of stomach characterising certain forms of intertropical fevers. It always indicates a severe and dangerous disease, with considerable local determination either to the stomach or liver, or to both. When it supervenes late in the disease, and has been preceded by pains, burning sensation, and a feeling of caustic heat in the epigastrium, or distension, oppression, and tumefaction in the hypochondriac regions, &c. it is to be viewed as indicating the approach of death, especially if it be obscure or suppressed, and accompanied with a sense of tension at the præcordia.

The *state of the abdomen*, upon examination, furnishes many useful indications as to the nature and complications of febrile diseases, and the probable issue of their different forms. Upon an attentive examination of this part of the trunk we have mainly to depend, as to the probable condition of the stomach, liver, spleen, and bowels,—the viscera which generally suffer the most severely, first in their functions and subsequently in their structure, during the progress of the various types and forms of fevers incidental to warm climates.

Great sense of tension, oppression, or pain in the hypochondriac regions indicates local determination to the liver or spleen, and a proportionate increase of danger, which may be considered as being heightened, if

tenderness on pressure, a harsh, caustic sense of heat or of burning, with a dry parched skin, great thirst, dark coated tongue, and sickness, be present in addition to those. Similar sensations and symptoms perceived in the epigastric region, particularly if accompanied with tumefaction in this situation or in the hypochondria, also indicate very considerable danger, especially when observed in the adynamic or malignant kinds of fever, or in the advanced stages of the inflammatory or bilious forms.

A tympanitic state of the abdomen, particularly when attended with a feeling of tension, intolerance of pressure, sense of burning, great increase of heat, a harsh, dry, and dusky appearance of the skin, and watery, foul state of the alvine discharges, with a brown or dark-coloured tongue, is to be considered amongst the most dangerous symptoms which come before us.

Fulness, tension, and soreness in the abdomen, especially about the umbilicus, with morbid mucous stools, and an irregular and irritable state of the bowels, indicate an inflammatory condition of the small intestines, generally affecting the internal tunics, and increased danger. If these symptoms be accompanied with a harsh dryness and increased heat of skin over the abdomen, and with vomiting, and if they supervene in the progress of fever, when the vital resistance of the frame is diminished, the danger may be considered as being imminent. Similar symptoms experienced at the epigastric region and in the course of the colon, with a dysenteric state of the alvine discharges, scanty urine, and mental despondency, are also to be viewed as evincing great danger.

With respect to the *evacuations from the bowels*, much may be said. They furnish many of the most important signs by which the practitioner can be guided, either as to his prognosis or to his practice. They should be carefully examined on all occasions, and not one should be put away until seen by some one of the medical attendants. It should also be recollected, that the alvine discharges are not always healthy or natural when reported as being so by the patient or his attendants. They may be natural in colour and smell, and yet be morbid as respects their consistence and the matters contained in them.

In the mild and less dangerous forms of fevers, the bowels are readily acted upon by purgatives, and the evacuations are generally feculent, although varying in colour and consistence, according to the abundant flow of bile, and the nature of the purgatives employed. When the discharge from the bowels gives relief from pain or uneasiness, and reduces fulness in the abdominal regions, a favourable form of fever may be expected. On the contrary, when the most active purgatives are required to procure an evacuation, the stools being watery, scanty, and offensive, or otherwise morbid, and voided with a sense of confinement and stricture, the abdomen being full, tense, hot, and uneasy, a severe form of disease may be looked for, attended with much danger. In many of such cases, especially if accompanied with signs of vascular determination to the internal organs, or great vascular excitement of the system generally, local or general depletion is indicated. When copious feculent discharges follow the above state, then a favourable crisis may be expected.

Frequent, scanty, bilious evacuations, presenting every variety of colour, from a light green to a greenish black, or from yellow to a greenish yellow, sometimes watery, at other times mucous and streaked with blood, occasionally feculent and extremely offensive, accompany the worst forms of bilious fevers, and indicate much danger, especially if they assume a pitchy appearance. When the stools present a smooth, dark-brown, or blackish appearance, like to molasses, the case is generally extremely unfavourable. A similar remark is applicable to the evacuations that betray an intimate admixture of blood, or bloody sanies, or a purulent mucus, with the other matters of which they consist. These appearances generally indicate very serious organic changes in the mucous surface of the small and large intestines, and often also of the liver.

The state of the *urine* varies much in the fevers of warm climates. This secretion generally is more or less changed from the healthy state. It is always more scanty than it is in health. When the premonitory signs of fever first make their appearance, it is often pale and copious; but as reaction becomes fully formed, it is more and more scanty, higher coloured,

or more red. In proportion as it is diminished in quantity and higher coloured, the disease may be considered as being severe. In the most dangerous forms of continued or remittent fever, particularly those which are characterised by symptoms of increased action of a morbid kind, and which soon assume the malignant or adynamic states, the urine is extremely scanty, and the secretion of it nearly suspended. If, in addition to being scanty, it presents a muddy, or greenish-brown, or greenish-black appearance, great danger may be apprehended. A greenish or greenish-brown hue of the urine is often remarked in the severe forms of bilious fevers, sometimes with a muddy state, and occasionally with darker-coloured clouds floating in it. When this kind of urine becomes paler, deposits a sediment, especially if it gradually assumes a brick colour, and becomes more abundant, a favourable change is about taking place. If this secretion becomes more copious and more natural, with a due deposit, the subsidence of the febrile excitement has commenced.

A sense of *anxiety* at the epigastrium and præcordia, with impatience of pressure in these situations, generally accompanies the worst forms of fever; and when attended with great restlessness and change of place, or of one posture to another, should be looked upon as a most unfavourable symptom. It is often attendant upon, or ushers in, the dark, grumous vomiting which accompanies the most malignant or disorganising forms of fever occurring in warm climates.

The *sensibility* and *excitability* of the frame vary much in different forms and types of fever, and even in different stages of the same form of disease. During the stage of excitement or re-action, when it is moderate in degree, and not accompanied with a disorganising tendency in any particular organ, the sensibility is often increased, and the excitability of the system augmented; but at the same time both are equally diffused. When the disease assumes, from the beginning or in its advanced stages, marked depression of the powers of life, with symptoms of a malignant or disorganising tendency, the excitability of the frame is evidently diminished, either by the causes of the disease, or by previously increased action, or by both;

and, in such cases, it is often at the same time unequally diffused, or concentrated in those viscera which are most remarkably diseased.

When the extremities and surface of the body are cold or clammy; the skin thick, dry, loose, and hide-like; the countenance sallow and collapsed, with a caustic heat at the epigastrium, &c. — we may generally consider that the excitability of the system is unequally diffused, and diminished in some organs and structures, and perhaps augmented in others, more particularly if there be present, in addition to those signs, morbid irritability of the stomach and bowels, and discharges of dark-coloured or otherwise morbid matters.

In many of those forms of fever which are characterised by active determination of the circulating fluid to the brain, followed by stupor, black tongue, low delirium, or coma, &c., the excitability of the frame generally seems to be suppressed by the cerebral congestion, as well as unequally diffused throughout the body. In all such cases the prognosis should be unfavourable. On the other hand, when the sensibility and excitability seem neither to be suppressed nor diminished, nor unequally diffused, the surface of the body, as well as the nervous system, still retaining their susceptibility to external and internal impressions, a favourable issue of the disease may be anticipated.

Morbidly increased sensibility and excitability, especially when carried to an unusual height, giving rise to violent spasms and convulsions, or increased activity of all the senses, are symptoms of a severe disease, and indicate a tendency to exhaustion or collapse, in proportion to the degree of sensibility displayed. This is often shewn in those forms of continued fevers which are prevalent during the hot season, and which are generally characterised by great determination of blood to the head.

The functions of the *brain* and *nervous system* are more or less disturbed in all fevers, especially in those of the inflammatory and bilious forms. In very many of the inflammatory continued fevers which take place during

the hot season, and which depend in a great measure upon the elevation of the temperature, fatigue, exposure to the sun, and intoxication, the encephalic character is extremely conspicuous from the first development of febrile action to the close of the disease: and, upon the examination of the fatal cases, the brain and its membranes generally betray the consequences of increased vascular action; such as injection of the vessels of the membranes; effusion of serum in the ventricles, or between the cerebral envelops; red points in the substance of the brain, with softening or hardening of its structure in many cases.

During the course of fever, the functions of the brain and of the senses require close examination; and, as intimately related to them, the states of sleeping and waking also are deserving of notice. If the sleep be sound and refreshing, undisturbed by frightful dreams or sudden startings, a favourable issue is indicated; but in proportion as the sleep deviates from this state, is severity of disease and danger to be apprehended. An agitated, unrefreshing sleep indicates increased vascular action of the brain; and this is still more to be dreaded if there be continued watching. Want of sleep frequently precedes delirium in some one of its forms. Stupor, and a great desire of sleep without obtaining it, indicates great danger, especially when it occurs in the more severe forms of fever.

Violent and furious delirium, with great excitement of the circulation, irritable state of the pulse, crimson-coloured and injected countenance, prominent eyes, and rending headach, often accompany the worst forms of inflammatory fever, and indicate a state of vascular excitement, which will soon be productive of collapse of a most formidable nature, even if the brain or its membranes escape immediate and irremediable mischief.

If the delirium be accompanied with convulsions, startings of the tendons, epileptic fits, muscular agitations, and tremors, the danger is great, and often near at hand. It is not less certain, although somewhat delayed, if followed by profound coma, relaxation of the sphincters, and involuntary discharges, &c. A mild delirium is not unfavourable, when unattended by signs of

malignancy or exhaustion of the powers of life ; and if it follow a state of stupor, it is often indicative of recovery. Very lively and extremely low or depressed delirium, all bespeak danger, but the latter especially. When the delirious patient expresses himself to be dying, he is generally right, even although there may not be many signs of danger evident. Indifference to death, with an apparent desire for it, rather than be at the trouble of resorting to the means of recovery, or a firm persuasion of his being perfectly well, are generally unfavourable signs.

A calm, serene, and animated *eye*, in the early stages, usually indicates a favourable form of fever ; and this state of the organ, in the advanced periods of the disease, shews approaching recovery. An agitated, wild, painful, confused, muddy, prominent, and turgid state of the eye is unfavourable, indicating a severe form of fever when present at its commencement, and great danger when observed in the advanced stages, especially if the white of the eye become of a dusky yellow. Intolerance of light indicates great excitement of the vessels of the brain ; and rolling of the eyes, with a wild, unfixed stare, often precedes severe paroxysms of delirium, convulsions, and coma.

A dull, sluggish state of the eye, want of animation, and sinking into the socket, a dark hue of the conjunctiva, with a sad expression, are all unfavourable signs. A pearly whiteness of the eye, with agitation and prominency, is a symptom of dangerous congestion of the liver and lungs, and, if succeeded by a dirty-yellow hue, indicates approaching dissolution.

Having thus enumerated the various symptoms which appear to us most certainly to indicate danger in the progress of fevers, as observed in the European constitution in warm climates, we shall detail a very few cases, for the information of the inexperienced reader. We have to regret our inability of illustrating this part of our subject to our wishes at present, owing to the circumstance of the hospital books, in which the principal details of our practice in fevers were detailed, being retained by the Medical Board of the Madras Presidency.

CASE CCXI.—*Death supervening during the cold fit of an Ague.—Appearances after Death.*

JOHN VIGOURS was brought into hospital at two o'clock, P.M. on the 15th June, 1816, after exposure to the causes of fever, with cold skin, covered with a cold sweat, tremors, syncope, occasional rigors, and rigidity of the abdominal muscles; pulse not perceptible at the wrist, apparent insensibility, &c. The following draught was immediately given:—R Tinct. camph. comp. ℥ss.; aquæ ammon. ʒj.; aquæ puræ, ʒiij.: and bottles filled with warm water were applied to his belly, back, and extremities. Warm wine was also given, until about a bottle was taken, without any change being effected. He died at 9 P.M., seven hours after his admission.

Examination.—Upon opening the abdomen, the stomach appeared enormously enlarged and inflated, so as to fill more than one half of the epigastric and the whole of the hypochondriac regions. The liver pressed on the diaphragm, and was much larger than natural, much congested, softer in substance, and darker in colour. White, radiated striæ pervaded the whole of the parenchyma. The gall-bladder was large, filled with dark ferruginous bile, and of a verdigris-green colour. The pancreatic and gall-ducts were not obstructed. In one part of the left lobe there was a white spot, which had much the appearance of an abscess; but on cutting into it, it appeared to be merely a white speck, without any very marked change of structure. The omentum was in a natural state, excepting only that its veins were much distended with blood. The spleen was engorged with dark blood. On removing the omentum, a general blush appeared over the whole of the intestines, which were considerably inflated with air, but did not contain any fæces; and on opening several parts of the duodenum, the colon, and rectum, nothing appeared but the natural mucus of the intestines, with some white, pultaceous matter, untinged by bile, and having the appearance of chyme. The cæcum and the whole extent of the colon were perfectly empty and natural; but at the extremity of the colon a considerable contraction was observed, extending about four and a half inches towards the rectum. The bladder appeared to be thicker than usual, but healthy, as well as the kidneys. The lungs were collapsed, but healthy. The heart was perfectly sound. The head was not opened.

Remarks.—The vital energy of the patient in this case evidently had been so affected by the causes of fever, which are frequently energetic during the night, when he was exposed to the cold night-air and raw fogs, as to have been incapable of making any effort at re-action, but sunk rapidly, and before any other morbid appearance than that of inward congestion could have supervened.

CASE CCXII. — *Intermittent of a protracted form, terminating fatally. — Appearances after Death: — Constriction of the whole Intestinal Canal.*

DR. C——— consulted us on the 19th May, 1821: he stated that he had been in bad health for some years, in consequence of an attack of fever terminating in ague, which he caught in Wynaud, and of which he had never got free. His symptoms at this time were cold chills (not rigors), which would continue upon him the whole day if not checked; these chills were not followed by the hot fit, but he felt an oppression during their continuance, and afterward for some time, that he could not account for. At the time he was speaking to us, he complained of the sensation, and we gave him a glass of warm brandy and water, which he appeared to require. At this time his pulse was regular, but it was not a firm nor yet a soft pulse, but one that appeared to be characterised by great irritation. He had no pain whatever. The skin was moist, and its temperature quite natural; he has a tolerable appetite; bowels very untractable, sometimes lax, and sometimes much bound; fæces he says are natural; tongue clean; eyes not clear, but without any yellow tinge. Laxative medicines act upon him sometimes very well, and at other times the most powerful have no effect; and when he is purged he always feels an excessive degree of weakness, amounting nearly to syncope. He has resorted to bark and other remedies calculated to prevent the return of the chills, without benefit.

These symptoms were altogether so singular and unusual, that at once we recommended a change of climate to Europe, but to this he objected: and with a view of acting very gently on the bowels, and exciting the powers of the stomach, we ordered the following medicine:—R Pilul. hydrarg. gr. j.; pilul. aloë. cum myrrh. gr. ij.; syr. q. s. Ft. pilul.; one night and morning. R Infus. gentian. comp. ℥viii.; infus. sennæ, ℥jv.; tinct. cardam. comp. ℥jss. M. ft. mist.; a wine-glassful every morning.

On the 21st May, Dr. C. mentioned that the mixture was not sufficiently active; and tinct. jalap. ℥j., sulph. magnes. ℥j., were added to the original formula. He was at this time in the habit of calling upon us, but we heard no more of him, or of the effect of his medicines, till the 3d June, when he told us that the mixture had given him great torture, and had not operated sufficiently; indeed, he said that very few medicines would act upon him at all, and that whenever he took brandy and water, which he was frequently obliged to do to keep off the chills of fever, it invariably made his bowels costive. This was just now the case. His pulse was 92; skin moist; tongue clean; says that the only thing he finds answer to keep off these

chills, is a pill made of calomel, gr. iij., opii, gr. ij., taken when they come on, and repeated every three hours while they continue. This being the case, and from the singularity of the symptoms, we desired him to take his pills, and to keep his bowels free either by enemata or castor-oil.

We saw him again, at his own house for the first time, on the 5th June. He was then in a very irritable state. The cold sensation, which he always denominates fever, is very distressing. The pulse, however, is regular, and the skin of a natural temperature; tongue clean, but rather dry, and covered with small flakes, of a peculiarly white saliva; there is much of anxiety in his looks, and there appears to be a very great want of vital power; all medicines have an unfavourable effect upon him, except the calomel and opium. We discontinued those we formerly prescribed, and desired him to take his pills, and at night a little castor-oil, with a view of clearing his bowels in the morning. We likewise urged the use of enemata, which he had not adopted as we had previously directed. We were desirous also that he should use the warm bath, and take ammonia and other restoratives which he liked; but to which there was some objection, and they were not resorted to: in a word, whatever was done seemed to distress him, and he had no resolution or even desire to try any thing. He sunk very rapidly from this time, and died in three days, without any other marked symptom.

He was *examined* soon after death, and the only morbid change which was detected was a contraction of the whole alimentary canal, from the œsophagus to the rectum. The small intestines were like those of a fowl, and filled with thick, adhesive, white, or cream-coloured pultaceous matter. The colon was also contracted to the size of our finger, and empty. The liver was pale-coloured and soft: the other viscera were natural.

Remarks.—The powers of life and the digestive and assimilating functions had sunk too far for medical aid before this patient came before us. To what the contractions in the alimentary canal could have been owing, we cannot take upon ourselves to decide. The extent and variety of the means which the patient had resorted to, rendered the difficulty of deciding respecting his treatment at its close extremely great.

CASE CCXIII. — *Remittent Fever.—Examination after Death.*

GEORGE MORLAND. 3d December. He has been in hospital since the 29th of October, in consequence of a venereal complaint, for which he has been treated with

the usual remedies. At present his skin is hot; tongue foul; and he complains of general uneasiness. — *Habeat* haust. emet. sæpè repet. donec supervenerit vomitus. *R* Mist. salin. ℥j.; vin. antim. ʒj. *Ft.* haustus, cujus ʒjss. quâque secundâ horâ capiat. *Injiciatur* enema purgans.

4th. — No fever; venereal ulcers improving.

5th. — He had an accession of fever this morning. — *Omit.* pilul. hydrarg. *Cont.* mist. salin. *Bibat* aquam acidulam, succo citrino factam.

Vespere. — Pulse frequent; skin warm and moist; bowels open; he seems better. — *Cont. med.*

6th. — Fever abated.

Vespere. — Fever considerable; tongue white. — *R* Tinct. opii, ℥xxx.; vin. antim. *Fiat* haustus, horâ somni sumendus.

7th. — He passed the night comfortably; pulse frequent; skin hot; tongue loaded. — *Habeat* pulv. purg. *Habeat* pro alimento sago.

8th. — He was easy during the night; pulse quick; skin hot; tongue yellow. — *R* Hydrarg. submur. gr. viij.; extract. colocynth. comp. gr. xvij. *Fiant* pilul. tres, stat. sumend.

Vespere. — Pulse slower; skin cooler; no stool. — *Habeat* pulv. purg.

9th. — Pulse 84; tongue cleaner; bowels open; he complains of pain across the epigastric region. — *Adhibeantur* parti abdominis dolenti hirudines xvj. *Habeat* pulv. purg.

10th. — He was uneasy in the night; pulse 96; skin hot; tongue yellow, furred. — *Mist. purg.* ʒiij.

Vespere. — Pulse frequent; skin hot; much thirst; nausea and vomiting. — *Habeat* haust. emet. *Foveantur* membra inferiora horâ somni.

11th. — The emetic operated well, and he was easy in the night; pulse 89; skin moist; tongue yellow, moist; evacuations natural.

Vespere. — He had an accession of fever at two o'clock, followed by sweating and drowsiness; pulse very frequent, small, tremulous; the face is flushed, and covered with profuse sweat; tongue moist; bowels open; he is unwilling to speak. — *Adhibeantur* capitis lateri cuique hirudines vij. *R* Aquæ ammoniæ, ℥xx.; tinct. camph. comp. ℥xxx.; aquæ puræ, ʒj. *Fiat* haust. stat. sumend.

12th. — He was restless in the night; pulse 108; skin moist; tongue covered with a pale-yellow fur; three watery stools; great languor and debility; no pain of head. — *R* Hydrarg. submur. gr. viij.; extract. colocynth. comp. gr. xvij. *Fiant* pilul. vj. stat. sumend. *R* Mist. salin. ℥j.; spirit. æther. nitros. ʒij.; vini antim. ʒj.; aquæ

ammoniæ, ʒij. Fiat haustus, cujus ʒjss. tertiâ quâque horâ capiat, vice mist. salin. olim præscript.

Vespere.—He became very unwell about one o'clock, and had cold shivering, succeeded by heat and sweating; the pulse was very frequent and indistinct, and he was oppressed with stupor and extreme languor; a blister was applied to the region of the stomach, the head was shaved, and some stimulant draughts were administered; at present he seems much better; pulse 130, distinct; skin warm and moist; the sensorium is less affected, and he answers questions.—Injiciatur enema purgans. Adhibeatur capiti emplastrum lyttæ, post meridiem horâ octavâ. Habeat haust. anodyn. horâ somni. Bibat infus. tamarind.

13th.—He was relieved by the blister, and has continued to sleep since he got the anodyne draught; pulse 102, fuller; skin moist.—R Mist. salin. ℥bj.; aquæ ammoniæ, ʒiij.; spirit. æther. nitros. ʒij. Fiat haustus, secundis horis sumendus.

Vespere.—He slept till noon, and was pretty well till about one o'clock, when he was seized with a cold fit, followed by heat and sweating; at the accession of the cold fit an anodyne draught was given, and was attended with advantage; he is now much sunk, and has not spoken for some time; respiration slow and laborious; pulse 124, soft, regular; a warm profuse sweat covers the body; countenance vacant.—Cont. haust. salin. heri præscript. statim. Habeat vini, ʒiij. Applicetur ad unam colli vertebram emplastrum lyttæ.

14th.—He has been very uneasy in the night, and seems much worse this morning; respiration hurried; pulse at the wrist indistinct; skin warm.—Adhibeatur suris emplastrum lyttæ. Died a few hours afterwards.

Examination after Death.—On removing the upper portion of the cranium, the dura mater was observed to have formed an extensive adhesion with its internal surface. The vessels of the pia mater presented an appearance of unusual venous congestion in the ventricles, which contained a moderate quantity of fluid, of a reddish colour. The membrana choroides was of a purple hue. The brain in general exhibited a considerable degree of venous congestion, and a large quantity of fluid was lodged at the back of the skull. The liver, stomach, and other abdominal viscera, were perfectly sound and healthy. The pericardium contained a quantity of clear serous fluid. The heart and lungs were quite natural.

Remarks.—The disease in this case proved fatal from collapse of the powers of life, and consequent congestion and serous effusion in the cranium. On the morning of the 12th, the bowels having then been well opened, and the morbid secretions carried off, bark in decided doses, combined with camphor or ammonia, ought to

have been exhibited, if, indeed, it ought not to have been given earlier. The disease was treated by a well-educated but young physician, who had not learned to adapt the means of cure to the varying circumstances of intertropical diseases.

CASE CCXIV. — *Continued Fever, with Congestion in the Head, followed by Apoplexy from effusion of blood.*

SERGEANT MATTHEWS, ætat. 31, admitted 19th May, 1820, into the General Hospital, Madras, with severe pains, especially in his loins and limbs, with numbness of the latter; complains also of pain at the epigastrium, with considerable oppression in his breathing; tongue white and excited; pulse quick; skin cool; considerable thirst; appetite impaired; bowels constipated; complaints of two or three days' standing, and following chills and rigors. — R Mist. salin. comp. ℥jss. tertiâ quâque horâ. Appl. hirud. xx. regioni epigast. Enema purg. stat.

Vespere. — Two copious bilious stools from the enema; pain at the epigastrium much relieved by the leeches; pulse 100, small; skin natural; tongue much excited; says he feels spasms in his feet occasionally. — R Hydrarg. submur. gr. xx.; opii puri, gr. ij.; cons. rosæ, q. s. Ft. bolus, stat. sumend. Cont. mist. salin. Repet. hirud. xx. ut antea, stat.

20th. — One stool of the same appearance as before; the pain at the epigastrium quite relieved by the leeches, but the pains in his limbs continue, and he feels very weak, particularly when he gets up to stool, so much so that he is obliged to have assistance; pulse 125, and oppressed, but not hard or full; skin natural; tongue much furred, but less excited this morning; no headach; great thirst; considerable fulness of abdomen. — R Mist. purg. ℥ijj.; ol. menth. miiij. M. stat. Habeat enema purg. et repet. bis die. R Mist. salin. febrif. comp. ℔j.; antim. tart. gr. jss. M. ft. mist.; sumat ℥jss. secundâ quâque horâ.

Vespere. — Frequent copious bilious stools; tension of abdomen much reduced; pulse 128 and small; pain at the epigastrium quite relieved; pain and numbness of his limbs no better; skin of a natural heat; tongue moist, furred, and white. — Repet. pilul. ij. ut antea, horâ somni. Cont. mist. salin.

21st. *Six o'Clock*, A.M. — Two stools in the night, of a yellow colour; feels quite easy in his bowels; numbness and pains of his limbs the same; tongue much excited; pulse 120, not so small as yesterday, and less oppressed; heat natural; thirst urgent. — Repet. haust. purg. stat. Cont. mist. salin. ut antea. Venesection ad ℥xviij. vel ad affectum.

Eight o'Clock, A.M. — Attacked this moment with symptoms of apoplexy; eyes fixed; breathing difficult and stertorous; head very hot; he expired in a moment. He was about to be bled, blood-letting having been ordered shortly before he was seized with the above symptoms. The bleeding was directed after the already copious depletions by leeches, owing to the suppressed state of his pulse, the great excitement of his tongue, and peculiar state of the eye, the pupils contracted, and of an unusual degree of whiteness and inanimation. He complained of no pain or uneasiness of any kind this morning in his head, and appeared comfortable and easy in every respect. He was of a very corpulent habit, had an extremely large head and a short neck, led an inactive life, and drank to excess.

On *examining* his head, three hours after his death, considerable extravasation of blood was found on removing the cranium. The dura mater was soaked in blood; the cerebral arterial system nearly empty; the brain was perfectly flaccid and soft; about three ounces of water were found in both the ventricles of the brain.

Remarks. — The numbness complained of in the limbs should have led to the employment of general depletion at the commencement of the treatment, instead of, or in addition to, the leeches. When we first saw the patient, on the morning of his death, the general bleeding was directed, notwithstanding he had lost between forty and fifty ounces by the leeches applied on the two foregoing days; and if it had been practised immediately, as directed, instead of being delayed two hours, future effusion might have been prevented.

CASE CCXV. — *Continued Fever, Inflammation of the Bowels supervening, with Peritonitis, from perforation of the small Intestines. — Post-mortem Examination.*

THOMAS BRIGHT, ætat. 28, admitted December 22, 1816, at eight o'clock, A.M., complaining of giddiness in his head, quick full pulse, tongue foul, and sickness at stomach, &c. — *Haust. emet. stat.*

Two o'Clock, P.M. — Vomited a good deal of bile; giddiness less; has been purged two or three times; motions watery and offensive. — *Calom. gr. xx.; pulv. ant. gr. iij. h. s. s.* Apply twelve leeches to the temples. *Mist. salin. febrif.;* a wine-glassful every three or four hours.

Evening. — Pulse quick and full; pain in the head rather severe; motions watery, of a reddish-yellow colour; tongue clean. — Apply twenty leeches to the head. *Cont. mist. salin. febrif. ut antea.*

28th. — Head much relieved; motions green and watery; pulse full and quick; tongue brown and furred. — Pulv. purg. stat. Cont. mist. salin. febrif. ut antea.

Evening. — Stools watery, copious, and green; tongue white, and covered with mucus. — Repet. pilul. calom. et mist. salin. febrif.

24th. — Stools a green colour, and watery, with some viscid mucus; tongue the same; pulse full and quick. — Pulv. purg. Repet. mist. salin. febrif.

Evening. — No alteration. — Repet. pilul. calom. et mist. ut antea.

25th. — The giddiness in his head returned; tongue white, dry, and excited; pulse oppressed; stools more feculent, but watery and green-coloured. — Apply twelve leeches to the temples, and a blister to the nape of the neck. Mist. purg. et mist. salin. febrif.

Evening. — Stools copious, watery, of a reddish colour, and with quantities of viscid mucus; headach better; pulse and tongue the same. — Repet. calom. et mist. salin. febrif.

26th. — Says he is better; skin hot and dry; pulse and tongue the same; motions pale-yellow colour, and watery. — Pulv. purg. Mist. salin. febrif.

Evening. — No material alteration; but he says he is better. — Repet. calom. et mist. ut antea.

27th. — Motions watery, black-coloured, and mixed with mucus; skin rather cool and greasy; tongue still white and excited; mouth clammy. — Repet. pulv. cathart. et mist. salin.

Evening. — Stools copious, feculent, and of a dark-green colour; pulse small and quick; complains of acute pain in his belly; tongue the same. — Apply twelve leeches over the belly. Repet. calom. gr. xx.; pulv. ant. gr. iij.; opii puri, gr. ij.; syrup. q. s. Ft. pilul. h. s. s. Cont. mist. salin. febrif.

28th. — Stools watery, of a yellow colour; feels sick and faint; pulse quick and hard; tongue white; has griping in his bowels. — Mist. cathart. Apply a large blister over the belly. Cont. mist. salin. febrif. ℞. cum antim. tart. gr. jss. add.

Evening. — No stool; pulse quick and hard; tongue white and foul; general soreness over the abdomen. — Repet. calom. h. s. Repet. mist. salin.

29th. — No pain in the bowels; says he feels much better; no stool; vomited in the night; skin cold and clammy; tongue foul, and of a green colour. — Mist. cathart. ut antea.

Twelve o'Clock, Noon. — Complains of sharp pain in his side; pulse very small and weak; tongue of a greenish-yellow colour; skin cold and moist, which has come on him suddenly. — R. Aquæ ammon. ℥xxv.; tinct. opii, ℥xxx.; aquæ puræ, ʒj. M. ft.

haust. stat. sumend. Skin quite cold; pulse not perceptible; motions green and watery; no pain of the abdomen, and is sinking. Died about five o'clock, P.M.

Examination immediately after Death.—The whole abdominal and thoracic viscera were in a high state of inflammation, and covered with layers of pus and coagulable lymph. The omentum appeared in a state of gangrene. The peritoneal coat of the stomach, and the whole of the small intestines, were in the highest state of red, florid inflammation, and the lower part of the ilium, about eight inches from its entrance into the cæcum, was of a dark-purple colour, with two ulcers through the gut, from which the contents were discharged into the cavity of the pelvis. The liver was very much altered in its appearance; the right lobe of a dark greenish-black colour, with bright-red spots on the part concealed under the ribs. The left lobe was of a green colour, with a raw, reddish appearance about the centre of it, and layers of coagulated lymph over the surface. The mesentery in general was highly inflamed. The lungs were inflated, loose in the cavity, but partaking generally of the peritoneal inflammation. Stomach much enlarged and inflated, covered externally with layers of pus, and the peritoneal coat red and inflamed: the whole peritoneum lining the cavity of the abdomen was of a bright-red colour. The external coat of the duodenum was inflamed, but the internal mucous coat was not. In the intestinal ilium, both the external and internal coats were inflamed. On laying open the ilium at its entrance into the cæcum, its internal and external coats were found much inflamed, but the latter most particularly, and two ulcers were observed, through which the contents of the bowel had escaped. On laying open the stomach, the internal membrane did not appear much inflamed, though there was a slight blush at the pyloric orifice and at the cardia, and the vessels were beautifully ramified throughout its whole extent.

Remarks.—This case was treated by one of the assistant-surgeons of the regiment, and it is evident he had not a clear view of its nature and complications. Bleeding should have been used more decidedly from the commencement, but particularly on the evening of the 27th, when he first felt acute pain. When patients are treated without tact, and on distinct indications, the most dangerous symptoms imperceptibly come on, and they are often lost when there was no apprehension of danger. We fear this is not an uncommon case. Here, the inflammatory action existing during the early stages of the fever in the small intestines was masked by the headach and general fever, and thus escaped attention until ulceration had made its way through the ilium, and produced general peritonitis, from the effusion of the contents of the bowel into the abdominal cavity.

CASE CCXVI. — *Continued Fever, with cerebral determination. — Recovery followed by relapse, disease of the Liver, and serous effusion in the Head.*

JOHN MORLEY, admitted 24th January, 1815, at Trichinopoly. Had been in hospital with continued fever and vascular determination to the head, for which he was bled, purged, and treated with diaphoretics, &c.; and was discharged, apparently well, about three or four days since. Has now returned with relapse, accompanied with some degree of stupor, deafness, dry tongue, clammy sweats, and frequent, feeble pulse. Upon admission, opening medicine was prescribed, which acted well on his bowels.

25th, *Evening*. — Pulse very frequent; stools pretty good; skin very moist; makes no complaint of pain. — Calom. gr. x. Cont. pilul. et mist. salin., to 3x. of which add tart. emet. gr. ss.

26th. — Some indistinct pain of right side; in other respects better. — Blue-pill every second hour. Repet. mist.

Evening. — Pulse is frequent; says he is better; took five pills; stools yellow. — R Calom. gr. x.; opii puri, gr. ij. Repet. mist.

27th. — Slept well in the night; only complains of deafness and great weakness; tongue is dry; skin moist. — R Mist. amar. 3j.; tinct. opii camph. 3ss. ter die. Half an ounce of the unguent. mercur. to be applied to the right side. Repet. mist.

Evening. — Stools unusually good, yet looks very ill; pulse 120, small, at noon it was as low as 100, and fuller; tongue is covered with a brown crust, edges moist; skin is moist and warm. — Cont. mist. cardiac., hydrarg. submur. cum opio, gr. ij.; et frictiones.

28th. — Seems better; his pulse is still very frequent; slept well; skin warm and moist; stools yellow; no pain. — Glass of bitters. Cont. mist. cardiac.

Evening. — Seems better, yet the pulse is very frequent, but regular; skin moist and warm; tongue cleaner; drowsiness diminished; stools dark and crude. — Repet. calom. gr. x.; opii puri, gr. ij. Cont. mist. salin. et frictiones.

Evening. — Urine more clear; complains of being restless at night. — Anodyne draught at bed-time, with tinct. opii, mxl.

29th. — Seems worse to-day; is restless, and talks incoherently; no complaint whatever; pulse is very frequent and irregular; skin moist and warm; tongue partly covered with a dry mucus. — A blue-pill every second hour. Cont. rubbing 5j. ung. mercur. to-day. Repet. mist. salin.

Evening.—Became worse at noon; some stupor, and more delirium; pulse more frequent; a blister to the head and one to the ribs; at present complains of pain from the blisters; pulse 120, more regular; skin warm and moist; tongue is yellow and dry; no stools. — Cont. mist. salin. Omit. frictio. Enema purg.

30th.—Passed a bad night, was delirious, at present is collected; pulse about the same in frequency, and rather more regular; tongue covered with a yellow crust of mucus, but moist; skin warm. — R Infus. sennæ, ℥ij.; tinct. ejusd. ʒiij.; tinct. rhæi, ʒj. Give half now, and repeat the saline mixture.

Evening.—Had copious very fœtid stools; slept in the forenoon, and took some wine; tongue is moist; is quite collected and calm; pulse regular, but not so frequent as in the morning. — Continue the camphor mixture.

31st.—Was in some measure delirious last night; appears pretty calm this morning, and has more strength; pulse still irregular, and very frequent; skin warm and moist; tongue more loaded with brown mucus; stools yellowish. — Cont. mist. camph. Enema emolliens.

Evening.—Appears better; took some beer; pulse, though frequent, is regular; urine nearly black; skin covered with a profuse moisture; tongue cleaner than it has been for several days; slept in the afternoon. — Cont. mist. camph.

February 1st.—Seems rather better; some delirium in the night; pulse is regular, weak, and very frequent; tongue rather dry, but not loaded; skin moist and warm; stools pretty good; urine nearly black. — Cont. mist. camph. Enema emolliens.

Evening.—No stool; urine more clear; no pain; no complaint whatever made; skin is more hot and moist; pulse is very frequent and irregular; tongue is dry and parched; breathing more laborious; on the whole is worse. — Cont. mist. camph. et haust. cum infus. sennæ, ℥ij.; tinct. sennæ, tinct. rhæi, āā ʒij. Enema emolliens.

2d.—More delirium in the night; pulse irregular and frequent, very weak; tongue dry and brown; skin is moist and warm; stools feculent; nearly black; countenance changed; stupor and deafness. — Cont. mist. camph.

Evening.—Urine is more clear; skin hot, and the pulse more irregular; tongue dry; lips parched; breathing laborious; on the whole is much worse, and sinking. — Cont. mist. camph. Appl. emplastr. lyttæ capiti. Blister rose well; was very delirious in the night; pulse 120, irregular; urine quite black; is at present in a stupor; mouth covered with dark incrustations. Lingered with the above symptoms till the 3d, when he died.

Examination of the Body.—The membranes of the brain, as well as the brain itself, seemed more vascular than natural, with considerable serous effusion. The substance

of the brain was somewhat softer, and the ventricles contained much serum. The veins and sinuses were congested with dark blood. The lungs were not sensibly altered. A small quantity of fluid was found in the thorax, and a considerable quantity in the pericardium. The heart was soft and flaccid, and as if softened in its ventricular structure: the auricles were loaded with blood. The liver was considerably enlarged; its structure engorged with blood, extremely soft, and of a very dark colour. The gall-bladder was filled with blackish bile; but the ducts were not obstructed. The spleen was large, soft, and friable. The other abdominal viscera seemed natural.

Remarks. — The relapse in this case seemed to have been occasioned by too early exposure and return to the incautious habits and regimen to which soldiers are accustomed. The energies of the frame were unable to undergo the treatment most appropriate to the nature of the derangements under which the patient laboured; for, whilst the state of the frame required tonics and restoratives, the disease of the brain appeared to be heightened by them, and the tendency to effusion increased.

CASE CCXVII. — *Continued Fever. — Death. — Appearances on Examination of the Body, &c.*

J. MIDDLETON, Honourable Company, recruit: admitted 20th August, 1819, at four o'clock, A.M. Complains of severe pain across his bowels, loins, limbs, stomach, and head; tongue very foul; skin hot; pulse quick and hard. He was bled to ℥xviij. from the arm, and took the usual purgative draught and calomel before he was brought to the hospital. — Apply six leeches to each temple, and twelve or sixteen leeches to the region of the stomach. R Enema purg.

Eight o'Clock, A.M. — Pulse 138, and very small; skin peculiarly hot and dry; tongue furred, and covered with a brown crust, and dry; has been purged frequently since he came into the hospital; has still pain in his head, and he appears heavy; the pupil of the eye contracted; no pain in his stomach or belly. — Shave his head, and apply cold vinegar and a bandage to it. Sponge his body with cold vinegar and water. R Mist. salin. febrif. ℥ij.; tart. antim. gr. ij. M.; a glass every two hours. Enema purg.

Evening. — No material change; tongue foul. — R Calom. gr. x. h. s. s.

21st. — Pulse 108, rather small and sharp; skin warm and dry; tongue brown and rather dry; face has a hectic appearance; he has no pains at all, but his head feels giddy; the eye is suffused, but the pupil contracts as usual; his bowels have been well opened, and his stools are morbid, and of a light-greenish colour. — Mist.

purg. ℥iij. Apply vinegar and water to his head. Sponge his body as before. Mist. camph. ℥bj.; spirit. æther. nitros. ℥ij.; aquæ ammon. ℥xxx. M.; a spoonful every two hours. Apply sixteen leeches to his head.

Evening.—Skin very hot and dry; tongue foul; pulse quick; had several stools from the medicine, of a dark colour.—Cont. mist. salin. febrif. R Calom. gr. x. h. s. s. Sponge his body frequently.

22d.—Pulse vibrating, 108; tongue clean; skin warm, but moist; head feels giddy; great drought in his throat; found great relief from the leeches; has not had any stools since yesterday.—Apply sixteen or eighteen leeches round the back of his head. Enema purg. Mist. amar. cum sennâ, ℥iij.; magnes. vitriol. ℥iij. M. stat. sumend. Cont. mist. salin. ut antea.

Evening.—Skin exceedingly hot and dry; tongue clean, and not very dry; is very thirsty; has no pain at all in his head, side, or belly; stools fluid, and of a dirty yellow colour; pulse very quick and small, 124; feels very drowsy; the leeches relieved his head this morning.—Apply a blister to the back of his neck. Toast and water for his drink. Sponge his body with cold vinegar and water. R Mist. camph. ℥bj.; spirit. æther. nitros. ℥ij.; spirit. æther. vitriol. ℥j. M.; a large spoonful every two hours. The cold affusion used immediately, (5 P.M.)

Nine o'Clock, P.M.—Skin not so hot since the cold affusion; pulse 120, and rather firmer; tongue parched; says he feels much easier; thirst troublesome; slight subsultus tendinum; lips covered with a black crust, and his teeth quite dry.—Mouth, lips, and teeth, to be washed with acid and water. Sumat haust. salin. efferves. stat. To be sponged frequently. Cont. mist.

23d.—Skin not so hot, but rather dry; tongue clean and rather moist; teeth have lost the brown crust; pulse very quick and hurried, 122; says he has no pain; he speaks as if his tongue and fauces were dry; says there is a dimness of sight; he had slight delirium in the night, which has not entirely left him this morning; stools watery and yellow; the blister rose very well.—Cont. mist. camph. ut antea. R Pilul. aloë. cum calom. ter in die. Continue to sponge his body and dress his blister.

Evening.—Skin continues hot and dry; tongue parched, but clean; lips covered with a black crust; teeth as at last report; had no stool; very little or no delirium; says he feels much better.—Sumat haust. ex ol. ricini quàm primùm. Habeat enema domest. Repet. hydrarg. submur. gr. x. h. s. s. Sponged frequently as before.

Nine o'Clock, A.M.—Pulse 128, and small; skin cool and moist; tongue also moist to-night, and is not so thirsty; feels quite easy; had three stools from the injection; watery, and very little feculent matter.—Cont. omnia ut suprâ.

24th. — Skin cool and moist; tongue dry, as also his teeth; pulse 120, and small; stools of a yellow, watery appearance; says he feels quite well this morning, (a bad sign.) — Sumat mist. purg. ℥iij. cum ol. menth. pip. ℥iij. quàm primùm. Cont. mist. camph. ut antea.

Vespere. — Evacuations of a dark-green colour, and copious, but voids them involuntarily in bed; pulse 120, and small; skin continues hot; tongue parched; teeth quite dry; had no delirium during the day; took some arrow-root and wine this afternoon; says he feels no pain; thirst very troublesome. — Cont. omnia. Repet. hydrarg. submur. gr. x. h. s. s. Pot. acid. nitr. ad libit.

25th. — Pulse 114, and small; low muttering delirium; subsultus tendinum; skin warm and dry; stools dark-brown colour, and small in quantity; tongue dry, and covered with a brown crust; considerable thirst. — Cont. acid drink, pulv. purg., enema, et camphor. mist. cum ammon. et æther., ut antea. Let a man be constantly with him to keep his mouth moist. Arrow-root for diet, and sponge his body as usual.

Vespere. — Pulse 120, and small; skin continues hot; tongue as at last report; has had frequent dark-coloured motions, but voids them involuntarily in bed; subsultus tendinum, and picking the bed-clothes the whole of the day. — Abscidatur capillum, et appl. empl. lyttæ. R Hydrarg. submur. gr. vj.; antim. pip. gr. iij.; cons. rosæ, q. s. M. ft. pilul. omni horâ sumenda, cum mist. camph. ut antea. Cont. enema h. s. Sponge as before.

26th. — Pulse 124, and firmer; skin not so hot, but dry; tongue parched and covered with a black crust; had a very restless night; stools of the appearance of green water, and very little or no feculent matter; blister answered well; subsultus tendinum continues, but in a less degree; very little delirium this morning. — Cont. med. ut heri præscript.

Half-past Two o'Clock, P.M. — Expired.

On *examination*, we found considerable congestion in the small intestines generally, but particularly the ilium, which was much contracted, and had an introsusception in one or two places; and at the part which enters the cæcum it was contracted to the size of a goose-quill, of a blue colour, and quite hard. The liver was natural. No diseased appearance was observed in the stomach, spleen, or kidneys. The vessels of the brain were generally empty, and there was a slight appearance of fluid suffused under the arachnoid. A small quantity of fluid was found in the right lateral ventricle, and a much larger quantity in the left; the choroid plexus quite pale and blanched. There was no appearance of congestion or increased action of any kind.

CASE CCXVIII.—*Continued Fever.—Appearances on Dissection.*

THOMAS FISHER. 9th November, 1816. Complains of violent headach; pains in loins, limbs, and over his body; tongue foul, &c.—Ol. ricini, ℥ij. Sixteen leeches to the temples.

Vespere.—Bled freely by the leeches; pulse very quick and small; skin warm and with a free perspiration; tongue white and excited; no pain in the belly, but has pain in the loins, and complains of great weakness.—Apply fourteen leeches to the loins. Calomel. gr. xx.; pulv. antim. gr. iij. h. s. Mist. salin. febrif. every three hours.

10th.—Feels weak after the leeches; tongue still white and clammy; pulse frequent; skin dry and greasy; had no motion in the night.—Ol. ricini, ℥ij. Sponge the body with vinegar and water. Repet. mist. salin. feb.

Vespere.—Stools copious, watery, with some feculent matter; tongue dry and white; skin cool, moist, and greasy; pulse full and soft; has no pain, but feels weak.—Cont. mist. salin. ut antea. Repet. pilul. calom. gr. xx. ut antea.

11th.—Stools dark-green colour and highly bilious; tongue white and clammy as before; no pain; pulse better.—Ol. ricini. Enema purg. Mist. salin. feb.

Vespere.—Eyes rather suffused; tongue still white and clammy; pulse frequent; skin hot; stools bilious, feculent.—Apply twenty leeches to the back of the head and neck. Repet. pilul. calomel. et mist. salin. febrif.

12th.—Stools copious, green, and granulated; tongue brown and furred, but moist; pulse 84 in a minute; eyes less suffused, and he has less pain and giddiness in his head; skin dry, but cool.—Mist. salin. Ol. ricini, ut antea.

Vespere.—Stools highly bilious, of a light-green colour, with white shreds; tongue clean; head better; eyes less suffused; pulse 78, full and soft.—Cont. mist. Repet. pilul.

13th.—Tongue cleaner and moister, but still furred; stools bilious, but more consistent and feculent; no headach or pain of any kind; pulse full and quick, 98 in a minute; thirst not urgent.—Repet. ol. ricini et mist. salin. Sponge the body.

Vespere.—Skin hot; pulse quick; tongue clean and moist, but foul and yellow at the root; stools highly bilious, of various colours; says he has no pain, but he appears to have some uneasiness when pressure is made on the right hypochondrium.—Apply sixteen leeches. Calom. gr. xx. Repet. mist. salin.

14th.—Can bear pressure on the epigastrium with more ease; his stools are highly bilious, and of a light-green colour; pulse 96, and intermits every fifth or sixth stroke;

tongue clean, but rather dry; feels weak and restless; no headach at all. — Enema purg. Mist. salin. febrif. Is very fond of cold tea, and has it often. Sago for breakfast, with a little wine, which he fancies.

Vespere. — Pulse soft and full, 98, and does not intermit at all; tongue cleaner; and stools watery, of a brown colour. — Cont. mist. salin.

15th. — Says he is very weak, but has no other complaint; tongue is moist and clean, though rather furred, and yellow at the root; pulse strong, 110; he has no pain in any part of his body; no bad taste in his mouth; his skin is not unusually hot, but it is dry, and there is something very unaccountable in this case. Mist. purg. Enema purg. R Mist. camph. ℥j.; spirit. æther. nitros. ℥ss.; spirit. æther. vitriol. 3ij.; M.; a spoonful every two hours. Apply a blister to the epigastrium.

Vespere. — Has been purged; motions feculent, and of a perfectly natural colour. R Pilul. hydrarg. 3j.; calom. ʒj.; pulv. antim. 3ss.; syrup. q. s. Ft. pilul. xx.; one to be taken three times a day.

16th. — Pulse 106, with a sharp beat; slept very well in the night; says he is better; tongue furred, but moist; skin dry; no stools in the night; no thirst; no pain of any kind, or giddiness; has a little appetite. — Repet. pilul., enema, et mist. camph. comp.

Vespere. — Pulse frequent and sharp, 114; stools bilious; tongue clean and moist. — Cont.

17th. — Pulse 98, not so sharp; stools feculent, of an olive colour, rather scanty. — Mist. purg. Cont. pilul. et mist.

Vespere. — The purging mixture was repeated about one o'clock, and operated at three; stools feculent, of a natural colour and appearance; on the whole he appears better. — Cont.

18th. — Pulse 102; motions scanty, but of a natural appearance; in other respects little alteration. — Repet. mist. purg. &c. &c. ut antea. This had no effect, and in two hours an enema was given, which brought away some natural fæces, with a great quantity of viscid, glairy mucus; pulse increased, 118; skin hot; tongue clean and moist. — R Calom. gr. xij.; pulv. antim. gr. ij.; syrup. q. s. Ft. pilul. horâ somni. Discontinue the mist. camph., and give the saline mixture as before. Repet. enema ut antea.

19th. — The medicines have operated very well; his motions appear perfectly natural, but he does not improve in appearance or strength, nor is he sensible of uneasiness any where; his appetite is improving; he takes sago; there is a great deal of irritability in the pulse, which, with the debility and absence of improvement,

is all the marks of disease he presents. The above medicines were continued; the bowels were kept free and regular, but not unnecessarily purged; the bark was administered, and his strength supported in every way possible. He lingered in the above state, with occasional variations, till the 2d January, 1817, when he died.

The following is the appearance on *examination after death*:—The whole of the small intestines were contracted to the diameter of those of a chicken, and much thickened in their coats; the ilium was discoloured with bile; the cæcum was inflated, but not diseased; the arch of the colon was filled with fæces, and apparently thicker in its coats than natural; the descending colon was inflated, and the sigmoid flexure and upper part of the rectum uncommonly contracted; the liver was of a darker colour than natural, and congested with venous blood; the gall-bladder was of an immense size, and filled with dark-coloured bile; the biliary and cystic ducts were somewhat constricted, but pervious; the coats of the stomach were thickened, but pale; towards the pylorus, this viscus was contracted in diameter, and the constriction continued uninterruptedly from the pylorus to the termination of the ilium into the cæcum; the mesenteric glands were enlarged and pale; the mesentery presented a leucophlegmatic aspect; the spleen was above three times the natural size, and softer in its structure; the thoracic viscera were tolerably sound, but the pericardium contained about ten ounces of water: the head was not opened.

CHAPTER II.

OF THE TREATMENT OF FEVER, AS IT OCCURS AMONGST EUROPEANS RESIDENT
IN WARM CLIMATES, PARTICULARLY IN INDIA.

IN order to treat fever with success in any climate, but particularly in warm climates, the practitioner should observe its phenomena closely, distinguish accurately the state of depression from that excitement, and endeavour to seize the period when one state is passing into the other, in order to prevent either being carried to excess. Thus guided, his practice will not be empirical, but a rational series of well-adapted means, directed to the removal of those morbid changes going forward in the system, and appropriate to each as it may arise.

It is impossible in any work, however copious and comprehensive it may be, to state with precision the treatment which the varying circumstances of particular cases may require. Although the different types and forms of fever described by us in the preceding sections, with their complications or local affections, comprehend the most marked varieties, yet there are numerous modifications of those forms, the one passing insensibly into the other, all requiring some variation in their treatment, according to the different shades which they present. To point out the treatment appropriate to such subordinate conditions of disease would be impossible, owing to their extreme diversity; but the practitioner, if he possess clear views as to the management of those forms of fever which have been particularised, and of the complications which they present, will be at no loss as to the treatment of such as peculiarity of circumstances may have rendered somewhat different from those more familiar to him. When he detects differences

or modifications, he will be naturally led to inquire into their causes; and if they be referrible to external agencies, he will be induced to remove their operation from the patient, or to counteract them when removal is impossible. The means of doing either the one or the other, his science will suggest, according to the nature of the particular influences requiring his attention. If the modifications proceed from the peculiarities of habit, temperament, or predisposition, these circumstances will attract his notice, and guide him in his choice of the means of cure, and the mode and period of employing them.

In the treatment of intertropical fevers, as occurring amongst Europeans, the practitioner should employ such remedies as are the best calculated to remove the morbid actions going on in the system, without trusting to the supervention of a spontaneous crisis. It is true that crises frequently supervene in the milder forms of fevers, especially when left chiefly to nature; and that the employment of very active or decided methods of cure often interferes with them, and prevents their supervention, inasmuch as such methods are often subversive of that state of system which leads to critical discharges. But in the great majority of cases of fever in the European constitution in warm countries, it would be generally dangerous, and often fatal, to wait the supervention of a spontaneous crisis; for, long ere it could be brought about, some vital organ would receive irretrievable injury, or the energies of the frame might be entirely subverted. Without waiting, therefore, for the appearance of such changes, and not attending further to them, when they do occur, than in promoting their full operation and influence, and in adopting the indication to which they may point, we should observe the maxim inculcated by Sydenham, to moderate excessive action as soon as it supervenes, and to restore action when it is diminished much below the healthy standard.

The observations which we are about to offer on the treatment of intertropical fevers, as they occur in European constitutions, will first have reference to their different types, forms, and complications; and afterwards we shall make some remarks upon the modes of employing the principal remedies in this class of diseases.

SECTION I.

Of the Treatment of the different Forms of Intermittent Fever, Simple and Complicated.

THE treatment of intermittents has reference to two particular states or periods of the disease, namely, during the paroxysm and the interval. We shall *first* consider the means which are requisite in the paroxysm of ague; and *secondly*, the treatment which is found most efficacious in preventing its return.

If the symptoms of the cold stage of the paroxysm of intermittent be severe, they should be moderated, lest the internal organs and the powers of life be injured by its long continuance, and by internal congestions, especially in the brain, liver, spleen, and lungs, which frequently supervene during a severe cold stage of the paroxysm. Amongst the means best adapted to the moderation of the cold stage, we may notice the hot or vapour-bath, followed by frictions of the surface of the trunk and of the extremities, the internal administration of warm stimulants, as camphor, ammonia, ether, warm wine, or warm brandy and water, and other remedies of the same class.

These means generally bring about re-action, or the hot stage, which usually terminates in a spontaneous crisis, generally in a copious perspiration, unless some local affection supervene in the course of the paroxysm and prevent its full development. When the vascular action in the hot stage is excessive, particularly if it be accompanied with great determination to the head, with delirium, or to the liver or spleen, with symptoms of inflammatory action in these viscera, we should resort to those remedies which are the best calculated to reduce it. Amongst these, the employment of general or local blood-lettings is often serviceable, especially in the plethoric, in those lately arrived in the climate, and the highly fed. When general depletion

seems to be too active a measure for the patient's strength, local depletions should be employed, and are always of great service. Under the above circumstances, either the one or the other ought to be resorted to, in order to guard important viscera from danger, and prevent the supervention of those internal congestions, obstructions, and inflammations, with which agues are so frequently complicated in the European constitution, when this means and free purgation are neglected in the early periods of the disease.

In addition to moderate depletion, when vascular action runs high, cold effusion, and the internal use of cooling diaphoretics, as the nitrate of potash, acetate of ammonia, camphor julep, antimonials, &c. are always beneficial, and generally promote the speedy supervention of the sweating stage. When we find that the previous paroxysm of the fever has been characterised by a very long hot stage, with symptoms of determination to the head, or to any of the abdominal or thoracic viscera, the sweating stage being imperfect, and the patient complaining of uneasiness in the seat of any important viscera, general or local depletions, particularly the latter, are usually requisite.

Having conducted, by the above means, the paroxysm to a safe conclusion, our treatment should be strenuously directed to its prevention. If the fit is mild, and not accompanied with any local determinations, very little interference on our part during its continuance is necessary. But our endeavours to prevent the return of the paroxysm of a mild nature should be equally strenuous with those resorted to in order to arrest the more severe disease; for although the previous fit has been slight, a severer one may follow; and we know not the extent of evil which may be produced in an important internal organ during even a comparatively slight paroxysm. Moreover, frequently repeated paroxysms of a slight nature lay the basis of organic lesion, and lead to disease which may ultimately terminate the life of its subject.

After the paroxysm, and especially if the patient has been recently affected by the disease, an emetic should be administered, and its operation encouraged by the free use of diluents. The advantages resulting from the use of emetics upon the invasion of febrile diseases, especially as they occur in the

eastern hemisphere, have been proved to us on many thousand occasions. But, in order to ensure their full effects, without the risk of inducing or developing inflammatory action, they should be administered when there are no urgent symptoms of active determination to the brain present, nor any sign of inflammation of the stomach, liver, or spleen. If given sufficiently early in fevers, whether intermittents, remittents, or the continued type, when these conditions of the organs which contra-indicate the exhibition of emetics have not yet supervened, and, when followed by an appropriate method of cure, they are prevented from appearing by employing them.

After the operation of the emetic, a full dose of calomel, of from fifteen to twenty grains, should be exhibited, and, about three or four hours afterwards, be followed by a purging draught. If these act not sufficiently upon the bowels in a few hours, their operation should be assisted by the administration of a cathartic enema. Having thus promoted the discharge of morbid secretions and fæcal accumulations, and removed local congestions by blood-letting, we may resort to the exhibition of bark, so as to prevent the accession of the paroxysm. Unless purgatives have been employed previously to the exhibition of the bark, so as effectually to carry off morbid accumulations, and unless local determinations of blood and congestions are removed by general or local depletions, we shall resort to this most valuable medicine to little purpose; for it will either not be retained on the stomach, or it will fail of producing its febrifuge effects if retained, and occasion obstruction and enlargement of the liver and spleen.

When the stomach nauseates or rejects the bark, we have often found that the exhibition of a full dose of calomel and opium, shortly before its exhibition, has caused it to be retained. This difficulty is now happily got rid of, since the introduction of the sulphate of quinine into practice. None of this very valuable preparation had reached India before we left that country; but from what we have observed respecting its effects in England, we conceive that, while it possesses the efficacy of the bark, it has the additional advantage of being less offensive to the stomach, and admitting of every mode of administration in a small bulk, or in whatever form may be most agreeable to the patient. The best mode of exhibiting the bark

in substance, is to give it in large doses, combined with ammonia, camphor, or ginger, shortly before the expected accession of the paroxysm.

Whilst the bark is being exhibited, particular care should be directed to the state of the biliary and alvine functions: full doses of calomel ought to be prescribed from time to time, according to the exigencies of the case, and followed by active purgatives and enemata. If a free state of the alvine functions is not preserved during the employment of the bark, and all morbid secretions and fæcal matters removed before its exhibition, the danger of inducing obstruction and enlargement of the abdominal viscera, and determination to the head, is extremely great.

When intermittents, of whatever type, are treated in this manner at their commencement, they generally yield in a short time; but if they have been of considerable duration when the treatment commenced, the difficulty of removing them is often great. In such cases, congestion or obstruction of some of the abdominal viscera has probably taken place, tending to perpetuate the disease, and to render the exhibition of bark, or any of its substitutes, much less beneficial than it would otherwise be. Here we must not only commence the treatment with local depletions and the exhibition of purgatives, consisting chiefly of calomel and the other medicines of this class already particularised, but we must continue to exhibit purgatives or laxatives daily until the secretions and evacuations assume a healthy appearance, and the tongue begins to become clean. When these effects are produced, bark, or the sulphate of quinine, may be exhibited; but they ought, more especially at the commencement of their administration, to be either combined or alternated with active purgatives.

It is chiefly owing to the neglect of this practice that diseases of the liver and spleen so frequently supervene in the course of agues. First congestion takes place, and it is followed by impeded secretion and morbid depositions in the substance of the viscera. These often lead to inflammatory action, especially if the bark or arsenic have been administered freely during the states of congestion and obstruction. When the patient

also is subjected to the continued influence of malaria during the treatment, the obstinacy of the malady, and the complications which supervene in its progress, are in a great measure to be imputed to this circumstance. The removal of the patient or patients to more healthy localities is here imperatively called for. But when this cannot be done, we must trust to the energetic employment of the remedies already particularised, keeping it always in view to remove all morbid secretions and fæcal matters daily, to improve the secreting functions, and to make a powerful tonic impression upon the system, by means of the bark given in as large doses as the stomach will bear, combined with those medicines which are the best calculated to heighten its febrifuge effects, and prevent it from offending the digestive organs. Amongst these, the different preparations of ammonia, ether, camphor, opium, ginger, pepper, cinnamon, and other aromatics, are the most beneficial.

The bowels of the patient ought always to be acted upon so as to procure three or four evacuations daily, and the purgatives by which these are procured should be calculated to promote the biliary and pancreatic secretions. Calomel in full doses at bed-time, either alone, or with antimony or opium, and the purging powder, or the bitter aperient mixture, with the addition of the sulphate of magnesia, given early in the morning, are amongst the best medicines we can employ. When the spleen is much enlarged, and while the patient is subjected to the enervating influence of malaria, calomel must then be given with greater caution, and its effects carefully watched. In cases of this nature, the purgatives selected should always be prescribed in combination with a tonic; and here we have found the decoction of cinchona with the sulphate of magnesia and tinctures of jalap and senna extremely beneficial. The sulphate of quinine may also be given with the sulphate of magnesia in similar cases, with equal advantage. It is chiefly by the energetic employment of tonics and purgatives combined, that we can expect to remove enlargement of the spleen, whether occurring in remittents or intermittents.

When the liver becomes enlarged, and more particularly if it seem to be also tender or painful upon a cautious examination of the abdomen of

the patient, leeches ought first to be applied, followed by poultices, a blister, or a plaster composed of equal parts of the emplastrum ammoniaci cum hydrargyro and the emplastrum picis compositum; calomel in full doses ought to be given at bed-time, and a free action kept up in the alimentary canal by means of deobstruent purgatives, as already pointed out. In enlargements of the liver, as well as of the spleen, advantage will often accrue from the insertion of an issue somewhat below the seat of tumefaction or of pain.

In many cases of the complicated or irregular forms of ague, especially where the patient has been ill for some days before he has submitted to treatment, the intermissions are attended with a considerable degree of uneasiness and sense of languor, with a foul, loaded tongue, want of appetite, and deficient energy of the whole frame. In cases of this kind, the abdomen and hypochondria are often full or tumefied, and even tender upon examination. Here there can be no doubt of the propriety of exhibiting purgatives, commencing with large doses of calomel, and of repeating them daily, until the fulness, sense of load, and foulness of the tongue, are removed. But in many of those cases, we should not defer the exhibition of bark until the tongue is clean, or the evacuations assume a healthy appearance. If we do defer it until these ends are attained, the patient may sink under the operation of the purgatives. Here we should begin to give bark when the evacuations and the state of the tongue evince some degree of improvement; and we shall seldom do mischief by prescribing it, although its effects ought carefully to be watched while the tongue continues moist, although it may be loaded. But when we thus venture upon the administration of bark, it will always be necessary either to combine it with a purgative, or to give purgatives in the intervals between its exhibition.

In all cases of protracted ague, of ague supervening to remittents or the continued type of fever, and of the irregular or duplicated types of the disease, we should be assured that either the liver or spleen, or both, is in a state of chronic disease. Here the abdomen of the patient and the state of the evacuations should be daily examined, and the treatment directed

according to the inferences we may draw from a careful examination of the phenomena of the case. If the liver be affected, or the spleen, or the functions of the bowels, or the stomach, we must put in practice the means of cure already recommended when the diseases of these viscera respectively were under consideration. To the sections of the Work where these subjects are treated we recommend our readers, as a repetition of the observations there offered would lead us into tedious prolixity. At the same time, however, that we endeavour to remove the complication, or the visceral disorder, whatever that may be, we should remember that we have also to cure the disease which induced it—to arrest the ague. Therefore, the exhibition of the bark, either at the same time, or alternately with the other remedies which the circumstances of the case may demand, should not be neglected, but be pushed to such a length as its effects, in respect both of the fever and its complication, may warrant.

SECTION II.

Of the Treatment of the different Forms of Remittent Fever occurring amongst Europeans in Warm Climates, particularly in the East.

THE treatment which has been recommended in the foregoing section is altogether applicable to the *mild* and *uncomplicated* forms of remittent fever. At the commencement of the disease, and when there are none of the indications already enumerated, to prevent their exhibition, emetics should be given; for, if resorted to sufficiently early, they are always of the most essential service. After their full operation, a large dose of calomel, or of calomel and opium, may be prescribed, which should be followed by purgatives and cathartic enemata. After these means have been repeated, so as to accomplish fully the ends of their exhibition,—namely, to remove all morbid secretions

and accumulations, and promote a free and healthy secretion of the internal viscera,—bark may be resorted to in the remissions. But care should be had not to give this medicine during active determinations to the head, liver, lungs, or spleen, until such complications have been removed by vascular depletions, either general or local, and by the judicious employment of whatever means the particular circumstances of individual cases may require. When the *prima via* has been sufficiently cleansed by the action of emetics and purgatives, and there appears to be no affection of any internal organ to contra-indicate its employment, the bark, or the sulphate of quinine, may be given in the manner insisted upon in the foregoing section.

In the *inflammatory* and *bilious* forms of remittent fever, our practice, particularly early in the disease, must assume a more energetic character. If the patient comes before us upon the invasion of the disease, and when there is no inflammatory determination of blood as yet induced in either the head, liver, or stomach, an emetic is of great service, and ought not to be neglected. In these forms of remittent, and particularly if these viscera be affected, vascular depletion, either general or local, or both, ought to be instituted, according to the degree of vascular excitement present, the habit and constitution of the patient, the circumstances in which he is placed, and the character of the endemic or epidemic influences to which he is subjected. In order, however, that depletion may be attended with its full effects, it must be practised early in the disease. If omitted until the vascular excitement has partly exhausted the powers of the system, its beneficial effects cannot be obtained; and the nature of the derangements induced, and the state of the powers of life, can then admit only of local depletions, which, however, ought to be employed, in order to remove such congestions as may have taken place locally in the progress of the disease.

In addition to general and local depletions, the exhibition of full doses of calomel, followed by purgatives and laxative enemata, are requisite, and should be repeated until morbid matters are entirely removed. During the vascular excitement which accompanies the early stages of the inflammatory forms of remittents, particularly when the skin is hot and dry, the cerebral

symptoms strongly marked, and the abdominal viscera free from congestions, cold applications should be kept to the head, and the cold affusion frequently resorted to. When the powers of the frame have been exhausted either by the duration of the disease, by the influence of its efficient causes, or by the previous excitement, and when the abdominal or other internal viscera furnish indications of congestion, the cold affusion is generally a hazardous measure; for the frame is unable to bear the shock which it occasions, and the circulation which is repelled by it from the surface is thrown in upon the diseased organs, so as to heighten the congestion from which they are already suffering, and to lead more rapidly to organic lesion.

Where, with the affection of the internal viscera, there is present much heat of surface, with a quick, irritable pulse, and dryness of skin, more advantage will be obtained either from the tepid bath or cold sponging the surface of the body, than from cold affusion. By these means, the irritation of augmented heat will be removed, and the vessels of the skin relaxed, without diminishing the determination to the external surface of the body. In order to obtain beneficial effects from the cold affusion in remittent fever, a certain degree of integrity of the vital powers is requisite; and where this remains, with a hot, dry surface, it may be employed with advantage. But when exhaustion or collapse has supervened, or congestive states of disease taken place in the internal viscera, we should never attempt it.

When the head is much affected, as it frequently is during the progress of the inflammatory and bilious forms of remittent fevers, leeches will be employed with advantage to the temples and occiput, the hair being removed, and evaporating lotions applied to the scalp. Care, however, should be had, especially during the progress of the fever, not to lower too far the nervous energy of the frame by these means. As to the extent to which they may be carried, or the duration of their application, the practitioner will be guided by the heat of the head, the force of the pulse in the carotid arteries, and the expression of the patient's countenance.

When the sense of heat in the epigastric region, with pain, tenderness,

fulness, nausea, and vomiting, indicate disease of the stomach, in the inflammatory or bilious forms of remittent fever, our means of cure should be directed in such a way as shall preserve this viscus from organic lesion. In the most concentrated states of this fever, the stomach is one of the viscera which suffers the most: it is often the most affected of any. When this is the case, the quantity of viscid, frothy, or ropy matter which is vomited is often extremely great. When the disease is attended with increased secretion of bile, as it often is, the matters brought up are generally bilious, sometimes remarkably so, being yellow, green, or greenish-yellow, and sometimes of a dark-green colour. When the matters thrown from the stomach are not mixed with bile regurgitated from the duodenum, they are then of a whitish or colourless appearance, and sometimes mixed with albuminous flakes and froth. But the repeated vomitings which accompany this state of disease generally induce an increased discharge of bile, and regurgitation of it into the stomach. If this fluid has been long retained in the biliary apparatus, or secreted in too great a quantity, or of a more than usually acrid quality, it generally heightens the state of disease of the stomach, which, as indicated both by the nature of the fluids vomited, and by the sense of pain, heat, and tenderness complained of in the epigastric region, is evidently inflammatory in its nature.

In cases of remittent fever, where the above symptoms are prominent, vascular depletion is imperatively requisite; but, to be beneficial, it must be practised early, and before the coats of the viscus have been injured. When inflammation of the stomach supervenes in the progress of intertropical fevers, it runs rapidly into organic change, and the energies of the system are very quickly exhausted. Therefore, our means of cure, in order to be successful, must be both judicious and promptly employed. When the state of the patient admits of it, general depletion should be practised; but, in every case of this description, the application of a large number of leeches, followed by hot poultices, and these by a large blister, ought never to be neglected. While these means are being employed, a large dose of calomel and opium, viz. twenty grains of the former and two of the latter, should be given, and

repeated according to the effects produced and the particular circumstances of the case.

Having, by these means, allayed the irritability of the stomach, as well as the inflammatory action affecting it, our next object should be, to carry off morbid secretions and fæcal accumulations. Purgative injections should be thrown up, and those medicines given by the mouth which are the most likely to operate fully on the bowels without offending the stomach. In the intervals between the exhibition of these, cooling diaphoretics, consisting of the liquor ammoniæ acetatis, with camphor julep, and small doses of the nitrate of potash, may be given.

When the bile is secreted in great quantity or of acrid quality, as it often is in the bilious forms of remittent fever, we should always dread that the active determination of blood to the liver, necessarily connected with such increased secretion, will terminate in inflammatory action, or in organic change of its internal structure. In cases of this kind, mild and cooling diluents, and demulcents with the nitrate of potash, liquor ammoniæ acetatis, and camphor mixture, should be given frequently, with the view of diminishing febrile excitement, diluting the irritating nature of the bile, and protecting the mucous surface of the alimentary canal from the effects of the morbid and too abundant secretion. Injections of a similar kind should also be thrown up, in order to guard the large bowels from injury.

When there are evident signs of inflammatory action having been induced in the liver, vascular depletions, and the other means insisted upon by us when treating of the diseases of that organ, are requisite. In cases of this nature, as well as in those forms of complication with inflammatory action of the small and large intestines noticed by us when the types and forms of fever were under consideration, local depletions, followed by the application of hot poultices or fomentations, and these by blisters, are necessary. In all the above states of disease, these measures should be employed early; for organic change is soon produced by the local inflammations supervening

in the course of fever, and, once induced, they either lead to irremediable disease, or destroy the patient. Hence the practitioner ought to watch carefully the progress of intertropical fevers from the first moment that a case of it comes before him; and as soon as local determinations or inflammatory action in vital organs take place, he should act with decision, and leave nothing to nature.

In cases where those symptoms are present which we enumerated as indicating inflammatory action in the bowels, the exhibition of full doses of calomel with opium, immediately after the local depletion, is extremely beneficial; and when the local depletions require to be repeated, the dose of calomel and opium should be repeated also. Gentle purgatives and laxatives may be next prescribed, and assisted with emollient and laxative enemata. If dysenteric symptoms be present, the injections may be anodyne as well as emollient, especially after morbid secretions and accumulations have been carried off. The use of cooling diaphoretics between the exhibition of purgatives or laxatives, is extremely serviceable; and if soreness and disorder of the bowels still continue, the application of a large blister on the abdomen is necessary. In all cases where the abdomen continues tumid, the tongue loaded, and the evacuations morbid, the use of purgatives and laxative injections should be persisted in, especially if the patient complain at the same time of fulness in the hypochondriac and epigastric regions.

Having removed, by the above means employed early in the disease, the increased vascular action characterising the commencement of the inflammatory and bilious forms of remittent fever, and having thereby arrested the local inflammations which often arise in their course,—in the inflammatory form, from the general excitement having induced increased determination to a predisposed organ, and in the bilious form, from the irritation occasioned in the stomach and bowels by the excessive discharge of accumulated bile of an acrid nature,—debility or exhaustion of the energies of the system is often the chief condition of disease against which we have to contend. If the patient be removed from the local causes which produced the fever, and

enjoy a healthy atmosphere, the above means are frequently of themselves sufficient to cure the disease, the functions of the secreting organs generally returning as soon as the morbid excitement of the system is restrained, the local determinations removed, and morbid secretions and accumulations discharged from the body.

But if the patient continues to be subjected, during the progress of the fever, to the same exhalations and influences which caused it, so favourable an issue of the above means is not to be expected. The previous excitement, as well as the continued operation of the causes of the disease upon the vital energies of the patient, necessarily are productive of exhaustion, although to a much less extent than if the means of cure specified above had not been resorted to. Accompanied with this exhaustion, in the more favourable cases, will be observed a more or less complete remission of the febrile symptoms. As soon after the employment of the measures insisted upon as such a remission appears, we must change our mode of attack, and endeavour to prevent the return of the fever, and preserve the energies of the frame against the depressing agents which surround it, and the exhaustion consequent upon previous excitement. At this period, bark may be ventured upon in the manner already noticed, and its effects carefully watched. As long, however, as the tongue continues dry, excited, or rough, and the skin hot, dry, and harsh, the remains or consequences of local determinations and inflammations are still unsubdued, and the exhibition of the bark is contra-indicated. Whilst, therefore, these symptoms are observed, local depletions, tepid or warm bathing, purgatives, diaphoretics, and external irritants, are required.

When, however, the general state of the system, as well as the indication furnished by particular symptoms, impress the mind that a trial should be given to bark, this valuable medicine should not be withheld. But its exhibition ought not to prevent the use of purgatives and laxative enemata from being persisted in, from time to time, for the purpose of carrying off the morbid accumulations which are always forming in the bowels in the course

of the disease. The bark or the sulphate of quinine may be given in conjunction with the other medicines already noticed as calculated to promote its effects, and render it less offensive to the digestive organs.

When exhaustion supervenes in the advanced stage of remittent fevers, even of those which, in their earlier periods, presented the inflammatory, bilious, or complicated states in the highest degree, the exhibition of bark is necessary, especially if the patient still continues within the sphere of those causes whence the disease proceeded. If this medicine be not employed, although the previous treatment has been most judicious, and the patient has experienced all the benefit it was calculated to afford, there will be considerable risk of relapse, or of the transition of the remittent into an obstinate intermittent form. When febrile action subsides after due depletions and evacuations practised early and judiciously, bark is seldom hurtful; and if it fails of being beneficial, its effects upon the tongue and the pulse will soon intimate the propriety of discontinuing it. When the tongue is moist, the skin soft and perspirable, and the pulse neither irritable nor hard, nor oppressed, nor very quick, this remedy may be exhibited either in conjunction with purgatives, or alternately with them. Full doses of calomel, or doses sufficient to promote the healthy secretion of bile, may be prescribed occasionally at bed-time, and followed by a purgative draught early in the morning.

In many of those cases wherein the exhibition of bark seems to be a doubtful measure, the decoction of this substance may be used and combined with the sulphate of magnesia and a purgative tincture; or the sulphate of quinine may be prescribed either with this salt or with the sulphate of soda, so as to keep up a gentle operation on the bowels. If calomel has been given in full doses early in the disease, and the bowels well evacuated during the progress of the fever, the blue-pill, either alone or with ipecacuanha, or with the compound aloes pill, may be taken at bed-time, while the bark is exhibited in any of the above forms through the day. It is chiefly in such cases as have been neglected in the early stages of the disease, and in which depletions and purgatives have been either

omitted or insufficiently practised, and laid aside upon the commencement of the exhibition of bark, that this medicine either fails of producing its good effects or proves detrimental, occasioning congestion, obstruction, or secondary inflammation in the liver.

In those forms of remittent fever which present the *adynamic* or *malignant* states of disease, either in a primary or secondary shape, our means of cure must chiefly be directed to the removal of morbid secretions and accumulations from the *prima via*, and the restoration of the secreting functions of the internal viscera and of the vital energies of the system. In the more malignant and concentrated forms of fever proceeding from terrestrial exhalations, and which are observed chiefly at the commencement of and after the rainy season, these ends are obtained with great difficulty. In those forms of the disease which commence with great excitement of the internal organs, and a state of tumultuous vascular action, concentrated chiefly in the viscera of the large cavities, principally in those of the abdomen, blood-letting, either general or local, or both, should be practised at the commencement or early periods of this state, especially in persons of a robust, plethoric, and sanguine constitution. If this concentrated state of internal disease be not moderated soon after its supervention by means of depletion, the vital energy of those viscera which experience the morbid action in the highest degree is soon exhausted, and organic change, with collapse of the powers of the frame, soon supervenes, with all the phenomena to which the term malignant may be appropriately given.

In cases of this description, emetics are beneficial at the invasion of disease only, and before the above state of concentrated and internal morbid action has supervened. The irritable and inflamed states of the stomach and liver which frequently mark the stages of re-action in this form of fever, forbid the exhibition of emetics after the earliest period of invasion has passed away, and increased vascular action taken place. Having instituted depletion, either general or local, at the commencement of the stage of excitement — the only period of this form of remittent at which it is admissible — our next object is to allay the great irritability of the stomach, generally present in

this form of the disease. With this view, a large dose of calomel, or of calomel and opium, should follow the vascular depletion, and be repeated according to its effects, and the circumstances of the case. One of our chief objects is to promote the secreting functions of the liver, stomach, and bowels, or to correct them, by the exhibition of calomel, as well as to diminish morbid action in the stomach itself. In many of the cases of fever which proceed from malaria, and assume the severest form, the secretion of the liver is either interrupted or entirely suppressed, as we have observed in the worst cases of the marsh-hill or jungle fevers, which are common in many parts of India. Here the large doses of calomel alone are most serviceable, followed by purgatives, and repeated according to the particular circumstances of the case; and, conjoined with the use of the warm bath, frictions on the surface of the body and extremities should be resorted to, and a large blister applied to the hypochondriac and epigastric regions.

While we thus recommend vascular depletion in the more concentrated and inflammatory states of remittent, which rapidly pass into the malignant and adynamic forms, we would not be understood as advising it in those cases in which the powers of the frame are insufficient to bring about re-action of the vascular system; at least it should never be employed until efforts at re-action appear, when a small blood-letting, either generally or locally, may be practised, especially if the warm or vapour-bath, and frictions of the surface, precede it. The advantages which are derived from a small or moderate blood-letting in this state of disease, consist chiefly in the relief it affords to the overloaded vessels of the large internal viscera, and to the congestion of the venous trunks and auricles of the heart.

When an adynamic state of system is present throughout the whole progress of remittent fever, from the earliest impression of its exciting causes, with a raw surface of the extremities, harsh state of the skin, weak pulse, foul black tongue, offensive and morbid evacuations, &c. we must endeavour to rouse the vital energies of the frame by means of the hot or vapour-baths, followed by assiduous friction of the extremities with stimulating substances. A blister or mustard cataplasm should be placed upon the

region of the stomach and insides of the thighs, and stimulants combined with antiseptics given internally. Of these latter remedies, the preparations of ammonia, the ethers, camphor, and the warm spices and aromatics, combined with the bark either in substance or in decoction, are the most beneficial.

A similar mode of treatment is indicated when the adynamic or malignant state of system supervenes to that of morbidly increased excitement and vascular action. Both conditions of the frame are generally accompanied with great irritability of the stomach, and the rejection of matters possessed more or less of morbid appearances. Frequently, in the last stage of the disease, following the state of concentrated and imperfectly developed action, the matters vomited are dark-coloured and grumous, and the surface of the body yellow, or of a dirty sallow appearance. This is an extremely unfavourable condition, and indicates a rapid exhaustion of the power of the capillary vessels. During the adynamic or malignant states, whether they occur primarily or supervene secondarily, a nearly similar mode of treatment is necessary. The irritability of the stomach, however, accompanying the secondary state of exhaustion, is much more violent, and less under the control of treatment, than that attendant upon the primary state of oppression: in the former, the powers of the organ are exhausted and its organisation injured; in the latter, they are oppressed merely, or at least simply diminished, and often admitting of restoration by means of powerful stimulants.

In the adynamic or malignant states of remittent fever, therefore, accompanied with irritability of the stomach, we should endeavour to allay this latter symptom. A large rubefacient cataplasm, or a large blister applied over the epigastric region and insides of the thighs, will often have this effect: so will a full dose of calomel and opium, in many cases, but not in all, especially in those where the energies of the organ are greatly depressed, and where the irritability is not a consequence of inflammatory action, or, if a consequence of such action, a remote one merely, and rather the immediate result of exhausted power. In all such cases of exhaustion or great depression

of the powers of this viscus, attended with vomiting or a pumping up of its contents, and of matters immediately after they are received into it, cordial stimulants should be employed in addition to the means applied externally, and the exhibition of calomel and opium: of the aromatic spices combined with ammonia, the ethers, camphor, opium, &c. are the most beneficial. In cases of this description also, substances which evolve the carbonic acid gas are very beneficial, owing to the strong impression made by them upon the organ. Hence spruce beer, bottled stout, or porter, are generally much relished by the patient, as well as administered with advantage.

During this state of system generally, and of the stomach in particular, bark in substance can scarcely be retained; however, when retained, it is frequently of great benefit. It is most easily borne by the stomach when combined with the ammonia or hot spices and opium. It may also be taken in powder with much benefit, in the following manner:—mix the bark in substance with a little ammonia and bottled stout, in the bottom of a large glass, so as to make it a thick fluid, then fill up the glass from the bottle as soon as it is opened. The briskness of the bottled beer will both cover the taste of the bark and cause it to be retained on the stomach. In this way, the sulphate of quinine also may be easily taken. There is, perhaps, no state of disease occurring within the tropics wherein the advantages promised from the discovery of this valuable preparation of bark are so very apparent as in the one now under consideration. It may be exhibited in so small a bulk—that of a very small pill—and in every variety of form and combination, that very few cases can occur in practice in which the zealous practitioner can now fail of procuring its retention on the stomach when the existing states of the disease admit of any expectation of advantage from its exhibition.

During the adynamic or malignant forms of remittent fever, while we endeavour to rouse the energies of the frame and allay the irritability of the stomach, we should not neglect to carry off the morbid secretions and faecal accumulations from the bowels, which, if allowed to remain, would lower still further the powers of life, and endanger the supervention of

disease of the bowels, under which the patient would rapidly sink. With this view, calomel should be given by the mouth, and purgative or laxative enemata frequently administered. Whilst we endeavour to promote and improve the secretions, and remove them from the bowels, we should avoid the use of those medicines which irritate or offend the stomach; as an irritable state of this viscus, when once induced in the above forms of fever, is not easily removed.

Amongst other remedies which may be employed in those states of the system which are attended with diminished energy of the powers of life, we may mention the spiritus ammoniæ aromaticus or succinatus, the spiritus ætheris nitricus, the compound tincture of cardamoms, the compound tincture of camphor, the ethers, and the various tonic and antispasmodic preparations in common use, which may be exhibited in conjunction with tonic and aromatic infusions, and small doses of opium, according to the views of the practitioner and the circumstances of particular cases.

If an irritable or dysenteric state of the bowels supervene in the course of remittent fever, we may generally attribute this circumstance to the irritation of morbid secretions and fæcal accumulations in the *prima via*. In these cases a full dose of calomel should be given, and be followed by castor oil, or the purging powder, or the bitter aperient mixture; and, in a few hours, aperient or laxative enemata should be administered so as to remove morbid collections; after which, anodynes, with gentle alteratives and light tonics, or the bark with aromatics, may be exhibited.

If this state of the bowels supervene during the adynamic or malignant forms of disease, whether these be primary or secondary, and the motions are very dark, pitchy, offensive, or otherwise morbid, the case is extremely unfavourable, especially if the abdomen be tumid and painful. In cases of this description, calomel is requisite, either alone or combined with opium and camphor; and the necessity of removing the morbid secretions requires the exhibition of purgatives, whilst the adynamic state of system demands a tonic and stimulating effect to be imparted to the stomach and alimentary

canal. The purgatives employed should therefore be combined with tonics; and hence, either the bitter aperient mixture combined with the compound tincture of cardamoms, and other aromatics should be exhibited; or, if the stomach will bear them, the decoctions of cinchona and rhubarb, with the tincture of rhubarb, or the bitter tincture (the *drogue amère*) contained in the list of formulæ given in the First Volume,* should be exhibited according to their effects. The decoction of bark and rhubarb may, at the same time, be administered frequently in the form of enema, and attempts be also made to rouse the energies of the abdominal viscera by frictions with stimulating substances, followed by rubefacient cataplasms or large blisters.

If the remittent assume the continued type, or, which is nearly the same, if the remissions become scarcely distinguishable, the states or conditions of the system being similar to those above treated of, and either the inflammatory, bilious, concentrated, adynamic, or malignant forms of fever being present, according as the case may be, the treatment must still be the same as recommended for each of the above forms respectively, the nature of the phenomena characterising each of them being no further changed by the more continued type assumed, than that the constitution suffers more decidedly, and the vital energies sink more rapidly, under the unremitting state of disease induced. Hence, the chief change being in respect of the intensity of diseased action, the means of cure appropriate to each form of disorder require not to be changed in kind, but to be administered with greater promptitude and decision.

When remittents assume the intermittent type, as they not infrequently do about the termination of the rains, and in localities abounding with malaria, when the patients still continue subjected to its influence, we may generally suspect that the liver or spleen, or both, will soon evince signs of enlargement or obstruction, if, indeed, these lesions do not always already exist. In cases of this nature, although the active exhibition of bark, the sulphate of quinine, or of arsenic, is requisite, in order to arrest the return of the paroxysms, which, by their continuance, would increase the mischief, yet the

* See p. 255.

active operation of purgatives and deobstruent laxatives is still more necessary ; for without them neither will the obstructions already existing be removed, nor the intermittent disease be safely arrested, nor the bark exhibited with hopes of permanent advantage to the patient. In cases of this nature, change of air is next in importance to the employment of suitable medical treatment ; and, in many cases, the one should accompany the other.

SECTION III.

Of the Treatment of Continued Fever, as occurring amongst Europeans resident in warm Countries, particularly in India.

THE continued forms of fever are most prevalent amongst those recent visitors to warm countries whose constitutions have not been seasoned to the climate, or suffered seriously from disease since their arrival in them. Continued fevers are not, however, restricted to this class of persons ; for older residents are also subject to them, especially during the hot season and the prevalence of epidemic influence. When fever assumes the epidemic form, it is continued in its type as well as remittent, according to the particular circumstances of the individuals affected, the season of the year, and the nature of its exciting and accessory causes. Generally speaking, a continued type of fever indicates either a greater predisposition to disease, or a more energetic operation of its causes. It is always characterised by more intense morbid action in the frame, tending to a more rapid exhaustion of its powers, and greater inability of spontaneous recovery.

The inflammatory and bilious forms of continued fever are the most prevalent, the former especially, in warm countries, particularly amongst the class of persons already alluded to. Indeed, it seems as if great intensity of excitement and of vascular action were requisite in a warm climate to the

continued type of fever. But this great augmentation and concentration of morbid excitement exhausts the irritability of the moving fibre with a rapidity proportionate to its intensity, and the patient is sooner or later precipitated from a state of re-action to that of collapse, with more or less of those signs to which the term malignant, as relating to fever, may be applied; unless, indeed, the patient be destroyed before such symptoms supervene, by the sudden injury inflicted upon some vital organ, as the brain or stomach, during the stage of vascular excitement.

In fevers of the continued, as well as in those of other types, the exhibition of emetics upon the invasion of the disease is generally attended with great benefit. But, to be beneficial, they must be exhibited before the vascular re-action following the invading symptoms is fully developed, and whilst the head, stomach, and liver, present no signs contra-indicating their administration. After their full operation, a large dose of calomel may be given; and purgatives, both by the mouth and in the form of enemata, may afterwards be exhibited.

If blood-letting were proper in cases of the remittent type of fever during the period of excitement, it must be still more requisite in the continued type. Accordingly, as soon as increased vascular action has supervened, we should subdue it by a copious depletion, which ought to be carried to the extent of making a decided impression upon the pulse; and the depletion should be repeated as soon as a return of the increased vascular action is observed, or if we find, after the lapse of a few hours, that the excitement has not been sufficiently allayed by the first blood-letting. Immediately after the first depletion has been performed, the bowels should be freely and copiously evacuated, especially if they have not been heretofore sufficiently acted upon; and if they have been fully opened, the effect should still be kept up by means of calomel in full doses, followed by cooling purgatives, or by castor oil, jalap, and cream of tartar, &c. In order to relax and cool the skin, especially if the fever be accompanied with increased determination of blood to the brain, the hair should be removed, cold applications kept to the head, and the cold affusion resorted to from time to time, until

a free perspiration breaks out generally over the body. At the same time cooling remedies, consisting of the nitrate of potash, liquor ammoniæ acetatis, and spiritus ætheris nitrici, may be given frequently with the camphor mixture, and the patient allowed to drink freely of water saturated with the cream of tartar, or made pleasant with tamarinds or lime-juice.

The prompt and energetic employment of the above measures will remove the increased action generally characterising the early stage of continued fever, and which, if not allayed by these means, would soon exhaust the powers of the frame, and precipitate the patient into a state of collapse and extreme danger. But it very frequently happens, especially when the vascular action has been allowed to proceed without the employment of decided and judicious means to subdue it, that some organ, owing to its susceptibility or state of predisposition, becomes affected in a greater degree than the rest of the frame, and is, consequently, threatened with imminent danger. Occasionally, more than one organ or texture are thus affected; and even two, three, or more viscera, sometimes present signs of being the seat of vascular action, carried to a higher pitch than through the rest of the body.

This condition of disease, or concentration of action to one or more viscera, sometimes appears early in fever; and in many cases not until the general vascular excitement is beginning to be exhausted, when it continues merely in those organs most disposed to increased action, either from inflammation having been kindled in them during the general excitement, or from some other cause not easily to be assigned. When the state of concentrated vascular action appears early in the disease, it will often be removed by the general depletions we have recommended. When it supervenes at a later period, especially after venesection has been practised, we must then trust to the operation of leeches to remove it, assisted by other measures, selected according to the organ or organs chiefly affected.

When the head becomes principally implicated, general and local depletions, cold applications, the cold affusion whilst the lower extremities are kept warm, purgatives, antimonial diaphoretics, and the usual means resorted

to for the purpose of deriving the current of the circulation from the brain, are obviously required. If the stomach seem to be chiefly affected, as is often the case, general bleeding, followed by the application of leeches to the epigastric region, large doses of calomel and opium given internally, purgative enemata, blisters over the epigastric region, &c., are requisite. When the liver furnishes indications of being the seat of inflammatory action, nearly similar measures are also necessary. The stomach is seldom the only seat of increased disease in fevers; the liver generally participates in the local determination, and in many cases it is extremely difficult to say whether the one or the other is most deranged. This occurs more especially in the forms of continued fevers in which the bilious character predominates. In all cases presenting this complication, the means of cure should be of a decided nature, and employed as early as the patient comes before us, or as soon as the symptoms indicating the local affection make their appearance.

In those cases where active depletions and alvine evacuations have been employed at the commencement of the stage of vascular excitement, complications or local determinations less frequently occur. Where, however, these means of cure have been neglected, not only do the above complications supervene, but others also make their appearance of an equally serious nature, such as inflammation of the bowels, dysentery, &c. Whenever the abdomen is tumid, painful, sore, tender to the touch or to a steady pressure, and especially if it be more than usually hot and dry, the patient complaining of a sense of internal heat, &c., we may rest assured that some of the abdominal viscera are seriously implicated. As to the particular organ affected, the situation of those symptoms, the state of the functions of the respective viscera, the appearance of the evacuations, and of the tongue, generally furnish information, which, if it be not always precise, is yet sufficiently obvious to guide the attentive practitioner to the adoption of a rational and efficient method of cure. If the above phenomena be chiefly referred to the right hypochondrium, we should dread affection of the liver, especially if the other signs of hepatic disease be present. If they be complained of in the epigastric region and left hypochondrium, and if they are accompanied with nausea or retching, disease of the stomach is indicated.

If these symptoms are seated in the vicinity of the umbilicus chiefly, the small intestines may be considered as suffering in a marked manner, particularly if the evacuations are either frequent and morbid, or entirely obstructed. If they be complained of in the hypogastric regions and course of the colon, with a dysenteric state of the alvine evacuations, the fever may be considered as offering the very frequent complication with dysentery. When the abdomen is generally tumid, tender upon pressure, sore, or painful, a diseased state of the peritoneum or omentum should be suspected.

In all these forms of complications, there are various other symptoms for which the practitioner should inquire, in order to enable him to decide in his own mind respecting the particular nature of the disorder which has supervened, and the number of organs and textures which has become more especially implicated in the progress of the fever; but the above are sufficient to furnish the indications for further research, and will readily suggest the probable nature of the complication, and lead him to inquire into the expression of the countenance and of the eye, the appearance of the tongue and the mouth, the character of the alvine discharges and the symptoms attending their evacuation, the state of the pulse, and the condition of the external surface, for further and more precise information. But whatever may be the particular modification these complications present; either in respect of their seat, or as regards the degree of morbid action characterising them, nearly the same means of cure are required for their removal. General blood-letting followed by the application of leeches, calomel in full doses with opium, the use of hot poultices and fomentations on the abdomen, the tepid and moderately warm bath, laxatives, emollient and laxative enemata, cooling and anodyne diaphoretics, and mercurial preparations with ipecacuanha and opium, are the most efficient means which we can use, and which the zealous and attentive practitioner will readily adapt to the particular circumstances of individual cases.

When continued fever presents complications of visceral disease, especially if the viscera of the thorax and abdomen be affected, we do not advise the cold affusion to be employed. The patient may, however, be advantageously

sponged with tepid water or vinegar and water, or with the nitro-muriatic solution, whilst the lower limbs are covered by the bed-clothes; and this means may be frequently resorted to, especially when the heat of the body is great, and the skin dry and harsh. In many cases where disorders of the bowels supervene in the progress of continued fevers, the complication may be readily traced to the accumulation of morbid secretions having taken place in the *prima via*, and irritated the mucous surface during their retention in the large bowels. Here the method of cure is obvious: the bowels must be fully evacuated, and morbid secretions removed by those purgatives which procure full, bulky, and feculent, not watery, discharges. Watery motions always exhaust the energies of the system in the latter stages of continued fevers, and therefore those medicines which occasion them, as the purgative salts, should not be employed. The bitter aperient mixture, and others possessing, like it, a tonic as well as a purgative property, ought to be selected.

When the powers of life are considerably exhausted by the disease, or when the method of cure recommended in order to subdue increased vascular action or local determinations has lowered the patient very much, we must trust chiefly to gentle diaphoretics combined with slight restoratives, as ammonia, spiritus ætheris nitrici, camphor, &c., whilst we endeavour to restore or to improve the secretions by the use of laxatives, or purgatives combined with tonics. Even when great exhaustion is present, the necessity of removing the morbid accumulations, which are always forming in the progress of fevers, is still requisite; but we should then combine, as recommended in the foregoing section, the purgatives or laxatives with tonics; at first employing those of a gently tonic property, and afterwards resorting to the use of bark or the sulphate of quinine, as the patient may bear them, or as the signs of depression may increase.

If the patient should betray great collapse of the powers of the frame, we must then resort to the most energetic means, such as the warm bath, followed by frictions with stimulating substances over the whole trunk and limbs, rubefacient cataplasms or blisters on the head and limbs, and stimulants and tonics internally, in any form least calculated to offend the stomach.

At the same time, the large bowels may be cleared out at intervals, and their tone supported by means of decoctions of cinchona or rhubarb, or of both. When the patient complains of diarrhoea or of a dysenteric state of the bowels, these decoctions, administered in the form of enemata, are particularly serviceable, especially after accumulations of morbid secretions have been carried off by a judicious employment of purgatives or laxatives.

When the patient has not come under treatment until the stage of excitement is nearly exhausted, and the vascular action has concentrated itself in some internal viscus, the practitioner must chiefly rely upon the operation of local depletions, followed by full doses of calomel and opium, by the tepid bath, tepid sponging of the surface of the body, blisters, diaphoretics, and purgatives or laxatives. If the stage of collapse be fully formed, then we must endeavour to rally the powers of life by means of stimulants, administered both internally and externally, combined with tonics and gentle laxatives. The same kind of medicines should also be given in the form of injections, repeated from time to time according to the particular circumstances of individual cases. In cases of this description, the assiduous employment of external excitants and rubefacients is of the greatest advantage.

In the malignant or adynamic forms of continued fever, in which the powers of the system, owing either to the very predisposed state of the individual, or the powerful influence of the exciting and accessory causes of the disease, is unable to bring about re-action of the vascular system, or when the efforts at re-action are inefficient, the energies of life sinking still lower after every ineffectual struggle to restore it,—local depletions, or even a small blood-letting from the arm, made early in the disease, will often assist the powers of life to induce a moderate degree of excitement in the frame, by removing the congestion and vascular load oppressing the heart and venous trunks. But in order that such depletions should be beneficial and devoid of danger, on every occasion they should be practised with great caution, and preceded or accompanied with the use of the warm bath, external frictions, and the exhibition of stimulants and diaphoretics. When the energies of the frame are thus made to re-act, care should be observed that

the re-action be not allowed to proceed too far, or to be concentrated upon some internal viscus.

When this state of excitement supervenes with difficulty, or is imperfectly developed, the stomach, liver, and spleen, frequently betray signs of considerable disease. In cases of this kind, the stomach is always irritable, and frequent and urgent retchings, with the rejection of matters of a very morbid nature, often take place. When these symptoms are present, leeching over the region of the stomach, followed by blisters, full doses of calomel and opium, and purgative enemata, are at first requisite. If these means fail of proving beneficial, and if the colour of the face, neck, and chest, become dingy, yellow, or streaked of various shades of yellow, we should consider a malignant state of disease as having supervened, and that the retchings will soon be followed by the discharge of dark, grumous, or flaky matters from the stomach, and, perhaps, by a dark or pitchy state of the alvine evacuations. When these symptoms supervene, we must have recourse to bark combined with acids; to warm cardiacs and aromatics, with small doses of opium, in order to allay the irritability of the stomach; to the hot bath, followed by frictions with stimulating substances; to rubefacient cataplasms or blisters placed over the epigastric region and insides of the thighs; and to gentle tonic and stimulating injections, to preserve the tone of the mucous surface of the large bowels. In cases of this nature, the sulphate of quinine in large doses with sulphuric acid promises to be of considerable advantage, especially in those cases in which the adynamic state of disease is chiefly owing to the continued influence of malaria upon the system, and when the powers of life require to be supported under the unremitting operation of this deleterious agent.

When the malignant or adynamic states of disease supervene either in a primary or secondary form, the necessity of resorting to the various tonic and antiseptic means within our reach is obvious. Camphor and ammonia in large doses, with the different preparations of ether, the tinctures of bark, rhubarb, and serpentaria, the tinctures of myrrh and musk, the warm spices and aromatics, &c., and various other substances of this kind, may be resorted

to, according to the varying circumstances of particular cases. When the powers of life appear to sink fast, and the vomitings, if the patient's stomach be irritable, consist more of a pumping up of the contents of this viscus than of active retching, — wine, brandy or brandy and water, cider, spruce beer, brisk bottled porter, &c., in various quantities, will then be frequently of service. In addition to those means, very hot and rubefacient cataplasms should be placed over the region of the stomach and insides of the lower limbs, and frictions with stimulating substances employed. In many instances, the hot bath or the vapour-bath will precede these latter means with advantage. By these measures the powers of life will sometimes be rallied and the patient ultimately saved, if no vital organ have suffered irreparable injury during the progress of the disease. When the patient seems to be benefited by the means adopted, care should be taken that excess of action be not induced by a too liberal use of them: our aim should be to bring the pulse and state of the surface and extremities as nearly as possible to the healthy standard. When the powers of life are sinking, the pulse is generally quick, weak, and unequal, but it is sometimes slow, irregular, and remittent. The usual effect of stimulants and tonics judiciously employed, is to lower the pulse and render it more regular, or to make it more frequent and natural when it has sunk beneath the healthy standard. But we should never aim at any further effect upon the pulse than this; nor should we endeavour to produce too great a glow upon the surface by the too liberal use of stimulants administered internally; for whatever increase of action we induce above the strength of the patient, or the internal standard of the heart's action, will be supported with difficulty, and be followed by proportionate exhaustion.

On the other hand, the practitioner should not be deterred from the assiduous employment of the means now recommended in order to rouse the energies of the frame, by the failure of those remedies which he first makes use of. He should resort to others, combine them as circumstances may warrant, and increase their quantities until an effect is produced. Having thus obtained advantage, he should endeavour to retain it, and to improve it by the use of those medicines which the resulting phenomena or contingent circumstances will point out.

CASE CCXIX. — *Ague, accompanied with copious Secretion of Morbid Bile.*

WM. THOMAS, ætat. 21. His Majesty's 69th Regiment. 20th April, 11 A.M. Admitted this morning with febrile symptoms, which seized him at Bangalore, on his march to Madras from Cannonore. At present complains of pain in his head, which is *very severe*; great thirst; bitter taste in his mouth, but no sickness at stomach; says he vomited a quantity of green matter the day before yesterday; tongue foul towards the root, and clean at the tip; pulse frequent and rather full; skin cool and moist; urine high-coloured; bowels constipated. — Sumat mist. emet. stat. necnon enema purgans. Appl. hirudines vj. utrique temp.

Evening. — Head no better; vomited a quantity of bilious matter after the emetic; four stools of a yellow colour and very fetid; tongue loaded, but moist; thirst less severe; pulse soft and regular; skin cool. — R Hydrarg. submur. ʒj.; opii puri, gr. ij.; cons. rosæ, q. s. Ft. pilul. ij. h. s. s. Sumat mist. purgan. ʒiij. primo mane. Spoon diet.

21st. — Head continues painful, particularly over the orbits; three stools in the night, but he cannot tell the colour; skin cool; pulse soft and pretty regular; tongue loaded towards the root, and clean at the tip; took his purgative early this morning; countenance sallow, and his eyes look perfectly bilious; urine high-coloured. — Repet. hirudines x. temp. Sumat mist. salin. compos. ʒjss. tertiâ quâque horâ.

Evening. — Head much relieved; purged freely; stools morbid; pulse 70 in the minute, and pretty regular; skin natural; tongue moist, and not particularly excited. — R Pilul. aloët. cum myrrh. ʒj.; hydrarg. submur. ʒss. M. ft. pilul. xx.; sumat unam ter die. R Mist. amar. cum sennâ, ʒiij. nocte maneque.

22d. — Attacked with rigor at twelve o'clock last night, succeeded by heat and considerable sweating; skin at present hot and covered with a warm perspiration; tongue moist, but loaded; pulse 110 and full; complains of considerable pain across his forehead; great thirst; no stool since last evening. — Sumat mist. purg. ʒiij. stat. necnon enema purg. Applicentur hirudines x. utrique tempori. Sumat mist. salin. compos. ʒjss. secundâ quâque horâ.

Evening. — Head much relieved; skin cool and moist; pulse 68 in the minute, firm and soft; tongue moist, but furred; great thirst; alvine evacuations copious and highly bilious. — Repet. pilul. et haust. amar. ut heri præ. Omit. mist. salin. ut antea.

23d. — Free from fever, and he says he feels a great deal better; stools bilious; tongue perfectly clean and moist at the point, but furred towards the root; pulse 72

and regular; appetite impaired; gums considerably swollen, but he complains of no soreness in them. — Cont. med. ut suprà. Sago diet.

24th. — Says he had a return of his fever at two o'clock this morning, which attacked him with rigor. At present (6 A.M.), skin cool and moist; pulse 86, and regular; tongue moist and clean, but slightly furred; some headach, and he is thirsty; no pain in his limbs; two copious stools, feculent, and of a natural appearance; gums not affected. — Cont. med.

Evening. — Free from fever; no stool since last report. — Habeat enema purg. stat. Cont. alia.

25th. — Stools copious and bilious; says he feels much better; tongue moist, but furred; pulse calm; skin cool; no thirst, and his appetite is pretty good; complains of a slight pain across his forehead. — Repet. hirud. vj. utrique tempori. Cont. alia.

Evening. — Pain in his head better; no stool. — Cont. med. Habeat stat. enema purgans.

26th. — Stools as yesterday, and copious; head easy; tongue moist, but furred; skin cool; pulse regular; complains of pain at the posterior part of the liver, which is much increased when he lies on his left side; no thirst, and his appetite is very good. — Cont. med. Appl. hirud. x. parti dolenti.

Evening. — Pain complained of this morning much relieved by the leeches; no stool; pulse calm; skin cool. — Habeat enema purg. stat. Cont. alia.

27th. — Pain in his side is relieved; stools dark-coloured, feculent, and copious; mouth not affected; says he feels altogether better; tongue moist; skin cool; pulse regular. — Cont. med. ut antea.

28th. — Much better; no stool since last report; tongue moist, and cleaner; pulse full and regular; skin natural. — Capiat mist. purg. ℥ij. stat. Cont. alia. Half diet.

29th. — Stools natural; free from pain; tongue clean; pulse good; skin cool. — Cont. med.

30th. — Stools yellow; tongue furred; pulse and skin natural; complains of weakness; side quite easy; no particular thirst, and his appetite is good. — Cont. med.

The purging medicine was continued for a few days longer, when he perfectly recovered, without any other febrifuge than the bitter aperient mixture. The complication of the ague with disease of the liver prevented the employment of bark early in the disease; and he recovered so quickly under the use of the medicines prescribed, that it was not afterwards exhibited.

CASE CCXX. — *Ague complicated with increased Secretion of Morbid Bile.*

GEORGE WILSON, ætat. 28, His Majesty's 69th regiment: admitted on the 18th April, at ten o'clock in the morning, with febrile symptoms, which attacked him at Bangalore, on his march from Cannanore. At present free from fever; complains of pain in his loins and lower extremities, with severe headach; tongue clean and moist; pulse soft, firm, and regular; bowels constipated. — Sumat pulv. jalap. comp. ʒj. stat. Appl. hirud. vj. utrique tempori. Spoon diet.

Vespere. — Head better; purged freely, but he cannot tell the colour; tongue clean and moist; pulse calm; skin cool; great thirst; appetite pretty good. — R Hydrarg. submur. gr. x. h. s. s.

19th. — Evacuations copious and highly bilious; headach much relieved; complains of pain in the calves of his legs; that of his loins easier; tongue rather excited; pulse 90, soft, firm, but not full or hard; skin natural; complains of pain at the cæcum and sigmoid flexure, but not acute; no particular fulness of abdomen; urine of a natural colour; thirst urgent; appetite unimpaired. — Sumat mist. purg. stat. Appl. hirud. x. abdom. parti dolenti. Sumat mist. salin. ʒjss. tertiâ quâque horâ.

Vespere. — Medicine purged him freely, and his stools are bilious and scald him in passing them; attacked about nine o'clock this morning with rigor, succeeded by heat. At present, (5 P.M.) skin natural; tongue clean, and very little excited; pulse rather quick, but soft; great thirst; pain in his belly relieved. — Repet. hydrarg. submur. ʒj. cum opii puri, gr. ij. h. s. s. Cont. mist. salin. ut antea. Sago and wine for his supper.

20th. *Half-past Six o'Clock*, A.M. — No stool since last report; slept all night, and he feels much easier; pulse 90 in the minute, soft, firm, and regular; some cough; tongue furred considerably, but moist; heat natural; belly quite easy; pain in his loins much better; rather thirsty; appetite pretty good. — Sumat mist. purg. ʒiij. stat. Cont. mist. salin. ut antea. Sago and wine for breakfast; soup for dinner. Habeat enema purg. si opus sit.

Seven o'Clock, A.M. — Attacked with rigor. — R Mist. camph. ʒij.; tinct opii, mxx. M. ft. haust. stat. sumend.

Vespere. — Stools dark and bilious; perspired considerably after the rigor this morning; skin cool, with a good moisture over it; tongue excited; pulse soft, firm, but not full or hard, and 90 in the minute; vomited a quantity of bilious matter since last report, but the sickness is quite relieved this evening; no headach nor pain in his

loins.—R Pilul. aloët. cum calom. no 1. ter die sumend. R Mist. amar. cum sennâ, ʒiij. nocte manequè.

21st. — Stools dark-coloured and bilious ; free from fever ; says he passed a pretty good night, and he feels easy this morning ; tongue furred, but moist ; pulse 86, soft, firm, and regular. — Cont. med. ut suprâ.

Nine o'Clock, A.M. — Return of rigor this moment. — Repet. haust. camph. stat. cum opio, ut heri præscript.

Five o'Clock, P.M. — Has had no stool since last report ; says he got very hot and perspired considerably after the rigor left him ; skin at present cool and moist ; tongue excited ; pulse 100, soft, and firm, but not full ; thirst very urgent ; complains of slight pain in his head. — Habeat enema purg. stat. Appl. hirud. vj. utrique tempori. Cont. pilul. aloët. cum hydrarg. submur. et haust. amar. ut suprâ. R Decoct. cinchon. ʒbj. ; acid. sulph. dilut. ʒj. ; tinct. cinchon. ʒjss. M. ft. mist. ; sumat ʒij. omni horâ. Sago and wine.

22d. — Free from fever ; stools highly bilious and copious ; tongue looks better ; pulse 100, and small ; head relieved ; thirst rather troublesome ; says he feels slight uneasiness at the epigastrium, and some pain when he vomits, or when the fever is on him ; took six doses of his bark, and vomited them twice. — Cont. pilul. et haust. amar. cum sennâ, ut heri, et mist. cinchon. ut antea. Appl. emplast. lyttæ regioni epigastrico.

Vespere. — Stools dark and bilious ; no return of his fever ; blister paining him ; skin cool and moist ; pulse calm ; tongue moist, but furred ; thirst urgent ; no headach. — Cont. omnia ut antea. Potu acid. nitros. ad libitum.

23d. — Stools as last evening, and copious ; no return of fever, and he says he feels quite easy ; urine high-coloured ; countenance looks better ; tongue clean and moist ; pulse 90 and full, but soft ; thirst less severe ; appetite good. — Cont. med. ut heri. Omit. vin. Low diet.

24th. — Free from fever ; two stools since last report, and looks better ; tongue furred ; pulse calm ; ptyalism pretty copious ; says he feels quite easy. — Cont. omnia.

25th. — Stools rather dark-coloured and copious, but not fetid ; free from fever ; tongue moist and clean ; pulse 84, soft, firm, and regular ; appetite good ; some thirst, and he complains of weakness ; gums sore, with ptyalism. — Cont. pilul. et haust. amar. cum sennâ, ut antea. Cont. haust. cinchon. cum acid. ut antea, ter die tantum.

26th. — Stools natural ; says he feels very well this morning ; ptyalism pretty free. — Cont. med.

27th. — Tongue clean and moist; says he feels quite easy; skin cool; pulse good; bowels open. — Cont. med.

28th. — Bowels regular; free from fever. — Cont. omnia.

29th. — Free from complaint, with the exception of weakness. — Cont. med. Spirit. oryzæ, ℥ij. in die.

30th. — Continues better in every respect. — Cont. med.

From this time he rapidly recovered.

Remarks. — The bark was not given in this case, owing to the local determinations and increased secretion of bile, until local depletion and purgatives were employed.

CASE CCXXI. — *Bilious Remittent Fever, in which the effects of active Purgatives, followed by the exhibition of Bark, were tried without benefit; the Fever being afterwards cured by Depletion, &c.*

JOHN M'Koy, ætat. 29, admitted September 26, 1816. Complains of headach and fever; skin hot; pulse full and quick; tongue foul; no sickness at stomach. — Mist. emet. stat. sumend.

Evening. — Has been well vomited, and feels rather better, but still complains of pain in his head; tongue dry and rather foul; skin moist; pulse full and soft. — Calom. gr. xij.

27th. — Pulse full and soft; feels generally better, but his head is still painful. — Mist. purg. ℥ij. Mist. salin.

Evening. — The purging medicine had no effect, and it was repeated with an ounce and a half of salts added, which has purged him very well; feels a bitter taste in his mouth; tongue cleaner; pulse full and soft; skin moist; head still painful. — R Calom. gr. xij.; pulv. antim. gr. jv.; syr. q. s. Ft. pilul. h. s. s. Cont. mist. salin. ut antea.

28th. — Much better this morning in every respect; headach better; tongue foul; pulse full. — Mist. purg. ℥ij., natron. vitriol. ℥ss. add. stat. sumend.

Evening. — A free perspiration; pulse still full and soft; headach better; has been well purged; stools dark-green colour, and mixed with gelatinous shreds. — Calom. gr. xij.; pulv. antim. gr. vj.; syr. q. s. Ft. pilul. h. s. s.

29th. — Had no return of fever till eleven o'clock, about an hour and a half later than usual, and not so severe; took early this morning, mist. purg. ℥ij. cum sal. Glaub. ℥j. add., which has operated; stools bilious and watery. — Mist. salin. febrif.

Evening. — Fever gone; in a full perspiration; tongue foul, but moist; head easier.

—Mist. salin. febrif. R Decoct. cinchon. ℥j. ; to commence in the morning, and to take a quart before ten o'clock.

30th. — Much better this morning ; pulse full and frequent ; has taken two pounds of the decoction of bark since last night. — Pulv. purg. stat. The fever came on about half-past twelve o'clock, after the operation of the physic.

Evening. — Pulse full and frequent, 106 in a minute ; head better since the fever left him ; tongue foul, but moist ; feels considerable thirst and great heaviness in his stomach, and constant sickness and bitter taste in his mouth. — R Pulv. ipecac. ʒj. ; antim. tart. gr. jss. M. ft. pulv. emeticus vespere sumend.

October 1st. — The fever does not remain so long, but is very severe. — Mist. purg. ʒij., sal. Glaub. ʒj. add. Bark.

Evening. — In a full perspiration ; tongue foul and furred, but moist ; pulse full, soft, and frequent ; the blister is doing its duty ; weight in his chest removed. — Repet. pilul. calom. ut antea. Cont. cort. ℥j.

2d. — Says the pill made him very sick last night, and he felt some delirium ; his pulse is not so full or frequent as it was, but his tongue is foul and of a dark colour, and there is an eruption on his mouth ; he bled from the nose this morning ; says the weight and oppression on his stomach are better ; stools natural, not copious. — Mist. camph. ℥j. ; spirit. æther. nitros. ʒss. M. ft. mist. ; a wine-glassful every two hours. Mist. purg. ʒij., sal. Glaub. ʒss. add.

Evening. — Has had very little fever during the day, and that came on about four o'clock, two hours later than usual ; he had no cold fit ; stools copious and highly bilious ; tongue still foul and of a dark colour ; pulse frequent and not so full, but upwards of 110 in a minute ; skin moist ; seems much oppressed, and takes deep inspirations ; no headach. — Apply a blister to the nape of his neck. Calom. gr. xij. ; extract. colocynth. gr. x. ; syr. q. s. Ft. pilul. jv. ; one every hour. Cont. mist. camph.

3d. — Purged a good deal ; stools exceedingly bilious and of a green colour ; tongue clean ; skin cool and moist ; pulse full and soft, 96 in a minute. — Repet. mist. purg. ut suprâ. Decoct. cort. ; to commence at half-past nine o'clock.

Evening. — Had an attack of fever at twelve o'clock, which lasted for two hours ; tongue foul and dark ; skin moist ; no pain at all ; stools copious, dark-green colour, and granulated ; pulse full and frequent. — Repet. pilul. ut suprâ. Mist. salin. febrif. ℥j. ; antim. tart. gr. j. ; spirit. æther. nitros. ʒss. M. ; a wine-glassful every hour.

4th. — Feels better this morning, and passed several thick, black, and green-

coloured stools in the night. — Mist. purg. Cont. mist. salin. febrif. ℥ij.; antim. tart. gr. jss. add.

Evening. — Pulse full, strong, and frequent; stools much more natural and better colour; tongue cleaner; skin cool and moist; had less fever than usual. — Repet. pilul. ut antea. Repet. mist. salin.

5th. — Tongue cleaner; pulse still full and strong; skin cool; purged; stools better. — Mist. purg. ut antea. Repet. mist. salin. febrif. ℥ij.; antim. tart. gr. jss. M.; a wine-glassful every two hours.

Evening. — Had a severe attack of fever; skin now cool and moist; tongue foul; stools watery, and more natural than usual. — Cont. mist. salin.

6th. — Much better; skin cool and moist, but his tongue is still foul; bowels loose; stools copious, of a better colour than before; no pain of any kind; pulse full and strong. — Repet. mist. salin. ut antea, every three or four hours. Pulv. cort. ʒj. three times a day in a glass of water, and ol. vitriol. ℥jv. to each dose. Enema purg. if his bowels are not moved this morning.

Evening. — Had slight fever this day, but not so much as before; his pulse continues exceedingly quick and full; skin hot and moist. — Apply eighteen leeches to his head. Cont. mist. salin. ut antea.

7th. — Pulse 90, full and strong; skin warm and moist; tongue still foul, but moist; thinks his head is relieved by the leeches; had no stools in the night; feels no fulness in his belly. — Enema purg. Repet. cort. pulv. ʒj., aquæ puræ, ʒij., et acid. vitriol. ℥vj.

Evening. — Tongue perfectly clean; stools hardened fæces, of a green colour; no pain; pulse the same as in the morning. — Repet. mist. salin. Cont. cort. ut antea.

8th. — Much better this morning; tongue clean and healthy; pulse not so full and strong; giddiness removed. — Cont. cortex, ut antea.

Evening. — No fever at all this day; thirst less; tongue rather white, but cleaner and moister; had a good evacuation this morning; pulse as before; no pains. — Repet. mist. salin.

9th. — Much better; tongue cleaner; skin cool; no fever. — Mist. purg. ʒij.

Evening. — Fever gone, but has still some giddiness about his head; pulse full and strong; tongue cleaner; stools natural. — Apply sixteen leeches to his head. Cont. mist. salin.

10th. — Improving rapidly; no fever for four days; tongue clean. — Repet. cortex, ut antea.

Evening. — Stools perfectly natural; tongue quite clean; no fever; convalescent. — Cont. mist. salin.

11th. — Recovering rapidly; tongue quite clean and healthy; pulse perfectly natural. — Cont. cortex. — *Evening*. Cont. med.

12th. — Cont. — 13th. Cont. — 14th. Cont. bark.

15th. — Quite well. Discharged. — Cont. bark.

Remarks. — The first change for the better that took place in this man was after the application of eighteen leeches on the temples, which, for the first time, produced an alteration in the state of his tongue and cessation of fever; and after the second application of sixteen leeches, his tongue got perfectly clean and healthy, and he has been recovering daily since. As he never complained of pain either in his head or any part of his body, except general uneasiness, bleeding was not particularly indicated, except from the state of his pulse, which we were in hopes of reducing by purgatives, &c.; but being disappointed, and finding great excitement to continue, although the alvine discharges were natural and the skin perfectly free, we were at last obliged to apply leeches, which were clearly attended with the happiest effects on the first application. The thirty-four leeches brought away about forty ounces of blood from the temples.

CASE CCXXII. — *Determination of Blood to the Head, with Fever, from active exertion in the Sun.*

PETER MAROW, recruit, admitted into the General Hospital on the 15th August, 1819, at ten o'clock, P.M., with a violent attack of fever, and determination of blood to the head, producing delirium. The attack has been occasioned by active exertion whilst exposed to the influence of the sun. Pulse full, strong, and hard; tongue excited and foul; bowels costive. — V.S. ad. $\bar{3}$ lxxv. He went to sleep immediately after bleeding.

One o'Clock, A.M. — Awoke from sleep; he is sensible; has voided about sixty ounces of urine, of a high colour; thirst urgent; pulse quick; skin warm; tongue foul. — Enema purg. stat. Calom. gr. xx. stat.

16th. — Much better this morning; tongue very much excited. — Pulv. purg. $\bar{3}$ j. statim.

Vespere. — Has been well purged, and has passed a great deal of hardened fæces; says he has no pain any where; seems sensible, but there is a sharpness in his look still, indicative of cerebral excitement; pulse soft and full. — Calom. gr. x.; pulv. antim. gr. iij.; syr. q. s. Ft. pilul.

17th. — Has some uneasiness about his head, but he is much better. — Cold applications to his head. Repet. pulv. purg.

18th. — The cold application to his head has been very useful ; he is wonderfully better. — Mist. salin. febrif. ℥j. ; a glassful every two hours.

He has been dreadfully bitten with the musquitos. His bowels were attended to till the 27th, when he was perfectly well, and discharged.

CASE CCXXIII. — *Fever with Abdominal Symptoms, &c.*

WILLIAM HALL, ætat. 18, admitted 17th June, 1816. Complains of general pain, but particularly of his left side ; tongue clean ; pulse regular ; complaints of two days' standing. — Appl. hirud. xvij. R Calom. gr. x. h. s. s.

18th. — Pain in his side removed by the leeches ; has not been purged. — Ol. ricini, ℥ij.

Vespere. — Very little purged. — Enema purg. Calom. gr. x.

19th. — Much better. — Ol. ricini, ℥ij. Enema purg. Haust. amar. cum sennâ, h. s.

20th. — Feels no pain in his right side, but the pain of his loins and limbs continues — Ol. ricini, ℥ij. Enema purg.

Vespere. — Feels much better. — Haust. amar. cum sennâ.

21st. — Had a good deal of griping in his belly in the night, but no stool ; feels a little pain on the left side, in the course of the colon ; tongue foul. — Apply twelve leeches to the part. Pulv. purg.

Vespere. — Pain all gone since the leeches. — Haust. amar. cum sennâ.

22d. — Pulse 108, firm and full ; no heat of skin ; tongue cleaner ; no pain at all in his belly, side, breast, or head, but complains of a violent sharp twitching pain in the loins, which was much relieved yesterday by the bleeding of twelve leeches ; bowels open. — Apply twenty-four leeches to the part. Pulv. purg.

Vespere. — Has been very freely bled ; the pain is removed, but he feels very weak ; pulse very frequent and rather fluttering. — Haust. amar. cum sennâ. Aquæ ammon. ℥xxx. Sago and wine.

23d. — Has no pain ; feels giddy from weakness ; pulse fluttering and quick. — Haust. amar. cum sennâ et ammon. ℥xxx. M. Enema purg.

Vespere. — Feels much better ; pulse frequent, but more regular. — No medicine. Sago and wine.

24th. — Pain in his head and giddiness ; no pain at all in his back ; his stools are feculent and natural ; pulse very quick and small, upwards of 100. — Pulv. purg. Apply two blisters to the temples.

Vespere. — Head better after the blister; pulse still quick; no pains. — No med.

25th. — Feels much better this morning; stools perfectly natural; tongue rather foul; pulse not so quick, fuller and softer. — Aq. Cheltenham. ℥j.

Vespere. — Tongue cleaner; no pain; fully purged.

26th. — Feels better. — Repet. aq. Cheltenham. — *Vespere.* Feels better. — No med.

29th. — Discharged.

CASE CCXXIV. — *Fever complicated with Disease of the Abdominal Viscera: treated by Leeches and active Purgation.*

DARBY DWIRE, ætat. 28, admitted 16th July, 1816; complains of pain in his head, loins, and limbs; sickness at stomach; tongue white; skin cool; pulse slow and regular. — R Mist. emet. s. s.

Evening. — Vomited green water; sickness at stomach better, but he has headach; no pain in his belly. — Apply sixteen leeches to the temples. Calomel. gr. xij.

17th. — Feels better this morning; stools copious and feculent, and hardened; tongue cleaner; headach relieved by the leeches; complains of pain of the abdomen. — Mist. purg. ℥iij.

Evening. — Stools dark-green colour; has still some pain in his belly across the arch of the colon, and in the back part of the right side; strains much; pulse small; skin cool. — Apply twelve leeches to his back, and ten to the arch of the colon. Calomel. gr. xij.

18th. — Leeches bled well; feels very weak, but the pain is less; pulse full, but very slow, being only 60 in a minute; tongue dry and white; pain in his back relieved; had no stool. — Sago and wine this morning, ten o'clock. Mist. purg. ℥iij.

Evening. — Pulse better this evening; stools watery, and of a brown colour; no straining; still complains of pain across the arch of the colon. — Apply a blister over the arch of the colon. Pilul. calomel. gr. xij.

19th. — Pulse 78 in a minute; tongue white and blanched; had one stool in the night; the blister is so painful that he cannot tell how the pain in the colon is. — Pulv. purgans.

Evening. — Pulse 84; stools watery; feels pain in the left side on pressure, about the turn of the arch of the colon; has thirst; tongue moist, but white. — Apply twelve leeches to the part pained. R Calomel. gr. xij.; pulv. antim. gr. iij; syr. q. s. Ft. pilul. h. s.

20th. — Stools watery, with some fæces and undigested vegetables; tongue foul;

pulse good; pain in his left side much easier after the leeches; the pain in the small of his back and right side continues; no fever; mouth affected; very little ptyalism.—
Mist. purgan. \mathfrak{z} ij.

Evening.—Mouth sore; a little ptyalism; feels the pain relieved; stools olive colour.—Repet. pilul. calomel. cum pulv. antim.

21st.—The pain in his side much better; mouth sore; ptyalism considerable; pulse good.—Mist. purgan. \mathfrak{z} ij.

Evening.—Stools consistent, of an olive-green colour; felt the pain sharp about the middle of the day; he is now better; tongue foul; spits a good deal.—Calomel. gr. xij. Haust. amar. cum sennâ, \mathfrak{z} ij.

22d.—Has pain about his navel, which comes on about nine or ten o'clock in the morning, continues for about ten or fifteen minutes, and strikes to the right side, and sometimes to the loins; his stools are scanty and watery; the pain in the arch of the colon and side much better; tongue foul; has a bitter taste in his mouth; has no sickness; pulse 78 in a minute.—Pulv. purgans. Mist. salin. febrif. \mathfrak{lbj} .; ant. tinct. gr. j.; spirit. æther. nitros. \mathfrak{z} ss. M. a wine-glassful every hour, to commence at ten or eleven o'clock.

Evening.—Feels better this evening, and had less pain in his stomach this day; stools of an olive-green colour, and consistent.—Calomel. gr. xij. Cont. mist. salin.

23d.—The pain he complained of about his navel he did not feel last night at all; thinks himself better; the pain in the left colon gone, but he still complains of pain in the right side; mouth sore; ptyalism considerable; pulse good, 78; stools copious and watery.—Cont. mist. salin. Mist. purgan. \mathfrak{z} ij.

Evening.—Stools olive-green colour, and liquid; feels pain on lying on his side.—Calomel. gr. xx.

24th.—Was not purged in the night; feels the pain lighter; mouth sore.—Pulv. purgan.

Evening.—Vomited the powder, and took \mathfrak{z} ij. mist. purgan.; his stools have more feculent matter in them, and he feels better.—Haust. amar. cum sennâ, \mathfrak{z} ij.

25th.—The pain is all gone; his mouth sore, but he has not passed any thing but watery stools.—Mist. purgan. \mathfrak{z} ij.

Evening.—Stools still watery.—Haust. amar. cum sennâ, \mathfrak{z} ij.

26th.—Pain much relieved; tongue still foul; pulse good; stools watery.—Mist. amar. cum sennâ, \mathfrak{z} ij. Pilul. colocynth. cum calomel. et antim. tart. no. 1. every night and morning.

27th.—No stools; pain is better.—Repet. pilul. et haust. amar. cum sennâ, \mathfrak{z} ij.

Evening. — Pilul. colocynth. cum calomel.

28th. — Mouth very sore. — Repet. pilul. colocynth. Haust. amar. cum sennâ, ℥ij.

Evening. — No alteration; no stool. — Cont. pilul. et haust.

29th. — Discont. pilul.

30th. — Mist. purgan. ℥ij. — *Evening.* Purged. — Repet. pilul. ut antea.

31st. — Pains still continue. — Cont. haust. amar. cum sennâ, ℥ij.

Evening. — Stools perfectly formed and natural, for the first time. — Repet. pilul. ut antea. Repet. haust. amar. cum sennâ.

August 1st. — Pains are gone, and he is recovering rapidly. — Haust. amar. cum sennâ, ℥ij.

Evening. — Stools perfectly natural. — Haust. amar. cum sennâ, ℥ij.

2d. — Cont. haust. amar. cum sennâ. — *Evening.* Haust. amar. cum sennâ, ℥ij.

3d. — No stools. — Ol. ricini, ℥ij.

Evening. — Much better; stools perfectly good. — Discont. pilul. Haust. amar. cum sennâ.

4th. — Very well; mouth better; spits less. — Haust. amar. cum sennâ, ℥ij.

5th, 6th, and 7th. — Cont. — 8th. Mist. purgan. ℥ij. — *Evening.* Quite well.

9th. — Discharged.

CASE CCXXV. — *Fever; affection of the Liver supervening, and afterwards Pneumonia, upon exposure to cold.*

MICHAEL COURDY, ætat. 22, admitted 18th September, 1816, evening. Complains of pain in his loins, bowels, and limbs; violent headach; when at stool great straining; tongue foul; skin cool. — Calomel. gr. xx. Apply eighteen leeches to his belly.

19th. — No material change. — Apply eight leeches to his temples. Mist. purgan. ℥ij.

Evening. — Head better, but he has still pain across his stomach. — Apply a blister to the pit of his stomach. Calomel. gr. xx. h. s.

20th. — The pain across his stomach is better; stools natural; pulse 78, but he complains of his head when he looks at the light; has a cough, which troubles him a good deal. — Haust. amar. cum aq. ammon. mxxx. add. Apply a blister to each temple.

Evening. — Headach better; the blister is still on; pulse fuller and more frequent than this morning. — Calomel. gr. xx. h. s.

21st. — Much better. — Mist. purg. $\bar{3}$ ij.

Evening. — Still complains of giddiness in his head; pulse small and frequent; tongue cleaner; skin moist; stools small in quantity, with some straining. — Calom. gr. xx. h. s.

22d. — Much better in every respect; less headach; tongue cleaner; pulse better. — Mist. purg. $\bar{3}$ ij.

Evening. — His mouth is sore; pains all relieved, but he still feels them. — Calom. gr. xx. h. s.

23d. — Better in every respect, but still complains of pain in his head, and slight pain in his right side and stomach. — Apply sixteen leeches to his side. — Mist. purgans.

Evening. — Pain in his side, head, and belly, better after the leeches; mouth sore, and feels very weak. — Haust. anodyn. $\bar{3}$ ij.

24th. — Much better in every respect; headach and pain in his side removed; pulse good. — Mist. amar. $\bar{3}$ j.

25th. — Has no complaint but sore mouth. — Garg. alum.

26th. — Complains this morning of more griping and straining; has a severe cough, but no pains of any kind; this change is occasioned by the cold wet weather. — Apply a blister to his stomach. Mist. amar. $\bar{3}$ j.

Evening. — Stools mucous; no blood; some straining; no pain. — Enema purg. Haust. anodyn. cum tinct. opii, ml .

27th. — Mist. amar. $\bar{3}$ ij. Apply two blisters to his temples.

Evening. — Headach no better; felt a sudden pain in his chest this afternoon; pulse frequent; has difficulty in breathing; skin not hot. — Apply sixteen leeches to his chest. Calom. gr. xij.; pulv. antim. gr. jv.; opii, gr. ij.; syrup. q. s. Ft. pilul. horâ somni sum.

28th. — Face a good deal flushed; still complains of headach and pain in his chest; cough very severe; pulse frequent; tongue foul; bowels regular, and alvine discharges natural; skin moist. — Mist. purg. $\bar{3}$ ij; natron. vitriol. $\bar{3}$ ss. add. The blisters have risen well, both on the temples and breast.

Evening. — Feels no alteration at all; pulse the same; the blisters are doing their duty. — Calom. gr. x.; pulv. antim. gr. vj.; opii, gr. ij.; syrup. q. s. Ft. pilul. horâ somni sumend.

29th. — Passed a better night, and feels much easier this morning. — Mist. purg. $\bar{3}$ ij. The blisters are very painful.

29th. *Evening*. — Feels easier; cough and pressure on his chest the same. — Calom. gr. x.; pulv. antim. gr. vij.; opii, gr. ij.; syrup. q. s. Ft. pilul. h. s. s.

30th. — Generally better and easier; tongue cleaner; bowels more regular, but cough still troublesome. — Mist. purg. Dress the blisters with unguent. epispasticum.

Evening. — Complains much of pain in his chest, and cough; pulse small and frequent; says the blister is very painful. — Repet. pilul. ut suprà.

October 1st. — He feels much better this morning; pulse 84. — Mist. purg. ʒij. Dress the blister with unguent. epispastic.

Evening. — Feels better this evening. — Haust. anodyn. cum tinct. opii, mxl.

2d. — Much better this morning; less pain in his side, and cough easier; tongue foul. — Mist. purg.

Evening. — Much better. — Repet. haust. anodyn. h. s.

3d. — Much better in every respect. — R Gum. ammon. ʒij.; aquæ menth. lbjss.; tinct. scillæ, ʒjv.; elix. paragor. ʒj. M.; a wine-glassful three or four times a day.

Evening. — Better. — Cont. mist. et haust. anodyn. ut antea.

4th. — Much better. — Cont. — *Evening*. — Repet. haust. anodyn. ut antea.

5th. — Improving. — Cont. ut antea.

Evening. — Better; blister healed. — Haust. anodyn. ut antea.

6th. — Better; tongue foul. — Haust. amar. cum sennâ, ʒij.

Evening. — Haust. anodyn. 7th. — Cont. — Haust. anodyn. h. s. s.

8th. — Much better in his chest, but he was purged this morning, and passed frothy matter. — Ol. ricini, ʒj.

Evening. — Says he passed gelatinous matter in his stools. — Calom. gr. xx. Haust. anodyn. h. s.

10th. — No medicine.

11th. — Quite well. 13th. — Discharged.

CASE CCXXVI. — *Remittent Fever, complicated with visceral Disease, treated by repeated Depletions and Purgatives, &c.*

THOMAS DURAND, admitted 6th January, 1817. Complains of griping and giddiness; pain of his loins and limbs; tongue whitish; pulse rather full and quick; skin hot. — Haust. emetic. Mist. salin.

Vespere. — Vomit has not operated, but was purged; giddiness continues; griping less; pulse weak, 120; tongue white. — Haust. emetic. stat. Mist. salin.

Eight o'Clock.—Vomited some green matter; giddiness continues; pulse rather full, 120; tongue white and dry; skin dry and hot; very little griping. — Apply twenty leeches to his temples. — Mist. cathart. Mist. salin. cum antim. tart. gr. jss.

7th. — Much better; has still a little giddiness; tongue white and dry; pulse 108, rather full; skin cool; has a little straining; stools very copious, yellow water. — Apply fourteen leeches to his head. Mist. cathart. cum magnes. sulph. $\bar{3}$ ss. Enema purg. Mist. salin.

Vespere. — Pulse full and quick; tongue white; stools copious, watery, yellow; much straining. — Apply sixteen leeches to his belly. Pilul. calom. gr. xx. Mist. salin.

8th. — Tongue clean and moist; stools morbid and feculent, with some blood; they have the appearance of sand having been mixed with them; pulse 78; head no better; skin cool; no pain in his belly. — Shave his head, and apply cold vinegar and water. Mist. purg. $\bar{3}$ jv., natron. vitriol. $\bar{3}$ ss. add. stat. Cont. mist. salin. ut antea.

Vespere. — Pulse 88; tongue dry; stools morbid and foul; head better. — Continue the cold application to his head. Calom. gr. xx., pulv. antim. gr. vj. add. h. s. s. Cont. mist. salin. febrif. ut antea.

9th. — Tongue still white and excited; pulse 96; has still pain and throbbing in his head, but not so bad as it was, and his eyes are clearer. — Apply a blister between his shoulders, and the following lotion to his head: — R Sal. ammon. crud. $\bar{3}$ ij.; acet. communis, $\bar{3}$ jv.; aquæ puræ, lbij. M. ft. lotio. Mist. purg. $\bar{3}$ jv. Mist. salin. ut antea.

Vespere. — Stools copious and morbid; pulse 102, full and soft; tongue white; head better; the blister has risen well. — R Calom. gr. xij.; pulv. antim. gr. vj.; syrup. q. s. Ft. pilul. h. s. s. Repet. mist. salin. ut antea. Cont. lotio frigid. capiti.

10th. — Tongue still white; head still giddy; no suffusion of the eyes; pulse 76, soft and full; stools morbid, of a brown colour, and very offensive. — Mist. purg. $\bar{3}$ jv., natron. vitriol. $\bar{3}$ j. add. stat. Cont. ut antea.

Vespere. — Stools copious, watery, greenish-brown; tongue white, dry, and furred; pulse 120, full and quick; giddiness less; has griping and much straining. — Pilul. calom. gr. xv.; pulv. antim. gr. vj. M. ft. pilul. h. s. s. Repet. lotio et mist. salin.

11th. — Tongue white and dry; stools watery, feculent, and greenish; giddiness much the same; pulse full, 90; griping and straining the same. — Apply fourteen leeches to his temples. Ol. ricini, $\bar{3}$ ij. Mist. salin. Enema purg. Repet. lotio.

Vespere. — Stools copious, feculent, frothy; pulse 96, full; tongue white and dry; giddiness continues; has a little soreness in his bowels; much straining. — Apply twenty-four leeches, and afterwards a blister to his bowels. Mist. salin.

Eight o'Clock, P.M. — Very little better; skin hot and dry; pulse 96, full; tongue white and dry. — Repeat the lotion. Apply twenty leeches to the occiput and neck.

12th. — Feels much better; stools feculent, whitish; tongue white and dry; pulse 96, full; no pain in his bowels; little straining. — Repeat the lotion. Mist. cathart. cum magnes. sulph. \bar{z} ss. Mist. salin. Enema purg.

Vespere. — Feels more giddiness; pulse 116, full; tongue furred and dry; stools reddish, watery, with white mucus, and some straining. — Apply twenty leeches to his temples. — Repeat the lotion. Mist. salin. Enema purg. Pulv. purg. $\bar{5}$ j.

13th. — Very little giddiness; pulse 108, full; very little straining; stools watery, copious, reddish. — Ol. ricini, \bar{z} ij. Apply fourteen leeches to his temples. Cont. lotio. Mist. salin.

Vespere. — Stools watery, brown; little straining; little griping; pulse 108; giddiness the same; tongue white and dry. — Mist. cathart. Enema purg. Apply a blister to his head. Repet. lotio. Mist. salin. Apply twenty leeches to his neck.

14th. — Head easier; tongue white; stools copious, feculent, greenish; no giddiness; pulse 84.

Vespere. — Feels better; stools copious, feculent, green-yellow, with blood; tongue white and dry; pulse 108, full; skin hot. — Cont. pil. antim. Mist. salin. Enema purg.

15th. — Perspired a good deal; pulse 90; skin cool and moist; head not painful, but giddy; tongue dry and furred; stools copious and morbid, mixed with feculent matter; the blister on his head is discharging freely. — Pulv. purg. R Mist. camph. $\bar{1}$ bj.; spirit. æther. nitros. \bar{z} ss.; vin. antim. \bar{z} ss. M.; one large spoonful every two or three hours. Omit the mist. salin.

Vespere. — Stools copious, watery, with feculent matter, and of a pale-brown colour; tongue cleaner; pulse quick and full; feels lightness and giddiness in his head, but not so much pain and throbbing. — Repet. calom. gr. xx. h. s. s. Capiat pulv. Doveri, $\bar{3}$ j. Cont. mist.

16th. — Pulse a smart beat, and feels quick, but it is only 90; his tongue is dry and white; stools copious, of a pale clay colour; he perspired a good deal in the night, and his skin is now moist; head better. — Pulv. purg. Mist. camph. ut antea.

Vespere. — Stools copious and morbid; tongue cleaner; pulse better; head better; skin moist. — Repet. pulv. Doveri, $\bar{3}$ j. et calom. gr. xx.

17th. — Looks much clearer in the eyes, and he appears better; stools very copious; he has no pain in his head except from the blister; has no bitter taste in his mouth; tongue cleaner; pulse about 86; perspired freely. — Repet. mist. camph. et pulv. purg.

Evening.—Head giddy; stools more feculent and natural; pulse the same.—Apply a blister between his shoulders. Repet. pulv. Doveri, ʒj. Repet. calom. gr. xx. ut antea.

18th.—Stools more feculent and of better consistence, but still crude and morbid; tongue furred and white; pulse 94, more regular and distinct; head giddy; no pain; the blister is still discharging.—Pulv. purg. Omit. mist. camph. Mist. salin. febrif. cum spirit. æther. nitros. ʒss.; vin. antim. ʒss. M.; a glassful every hour.

Evening.—Stools exceedingly copious, full of thick viscid mucus and fermented feculent matter; tongue cleaner; his head is better and not so giddy; skin moist; pulse the same; mouth not sore.—Repet. pulv. Doveri, ʒj. et calom. gr. xx.

19th.—Stools small, only mucus, which he passed without straining; tongue cleaner, but dry; pulse 80; feels lightness in his head, but less pain than before; did not perspire so much as usual.—Repet. pulv. purg. Cont. mist. salin. ut antea. Cont. calom. gr. xx. Pulv. Doveri, ʒj. h. s.

20th.—Pulse much better; no pain; stools becoming perfectly natural; perspired last night a good deal.—Pulv. purg. Cont. mist. salin.

Evening.—Stools copious; head better.—Repet. pulv. Doveri, ʒj. Pilul. aloët. cum calom. et pulv. antim. three times a day. Omit. pilul. calom.

21st.—Stools quite natural; tongue still rather excited; pulse natural; head much better.—Pulv. purg. Cont. pilul. ut antea. Repet. pulv. Doveri, h. s. Meat.

22d.—Stools quite natural; has little giddiness in his head; pulse natural, 78.—Apply a small blister to the right temple. R Mist. purg. ʒjv., magnes. vitriol. ʒj. add.

Evening.—Stools more feculent and natural; head not so giddy; tongue cleaner; pulse quite regular and natural.—Repet. pulv. Doveri. Pilul. ut antea.

23d and 24th.—The symptoms and treatment were unchanged.

25th.—Stools tenacious, glue-like, of a brown colour, with the appearance of some blood; his tongue is cleaner, and his head is better; pulse 80.—Cont. pilul. ut antea. Pulv. purg. Pulv. Doveri, h. s.

26th.—Complains this morning, for the first time, of pain in his side, in the seat of the liver, and quite confined to the right side, from the ribs downward to the right iliac region; pulse 72, regular and firm; tongue, as usual, white and excited; head still giddy.—Mist. purg. ʒjv., magnes. vitriol. ʒiij. add. Apply eighteen leeches to his side. Repet. pilul. ut antea. Rub in ʒj. unguent. mercur. nocte maneque.

Evening.—Has not so much pain in his side since the leeches, and his head is better; his stools are copious, crude, and mixed with tenacious mucus.—Cont. pilul. et mist. ut antea.

27th. — Stools tenacious and feculent; feels soreness under the umbilicus; there is no fulness at all in his belly; his tongue is white and rather dry; skin cool; pulse 94, and rather hard; his head continues still giddy. — Apply eighteen leeches over his belly. Mist. purg. $\bar{\text{z}}$ jv.; natron. vitriol. $\bar{\text{z}}$ ss. M. ft. haust. Cont. pilul. ut antea.

Evening. — Stools copious, crude, and feculent; has still pain in his belly; feels no relief from the leeches; pulse soft, full, and frequent; tongue dry and white; pulse 102. — Apply twenty-four leeches over his belly. Calom. gr. xx.; opii, gr. ij.; syrup. q. s. Ft. pilul. h. s. s. Mist. salin. febrif.

28th. — The pain in his belly is very much relieved by the leeches; tongue cleaner and moister; pulse 80, regular; his head is better this morning, but he feels it always worse in the heat of the day; stools natural. — Mist. purg. $\bar{\text{z}}$ jv., natron. vitriol. $\bar{\text{z}}$ ss. add. Cont. frictio. Cont. pilul. ut antea. Apply eighteen leeches more to his belly.

Evening. — Pain and soreness in his belly quite gone; his head is better; stools crude, watery, and feculent, of a brown colour; tongue furred, and bright yellow; no bitter taste in his mouth; pulse 88, and rather hurried. — Calom. gr. xx.; pulv. antim. gr. vj.; opii puri, gr. ij.; syrup. q. s. Ft. pilul. h. s. s. Cont. frictio et mist. salina.

29th. — Tongue not so yellow, but still furred and chopped; pain in his belly all gone; head not so giddy as it was, and with less throbbing; pulse 80, more regular. — Repet. mist. purg. $\bar{\text{z}}$ jv.; natron. vitriol. $\bar{\text{z}}$ ss. M. stat. Cont. frictio et pilul. ut antea.

Evening. — Tongue much cleaner; pain in his head continues; the pain in his belly very slight; pulse quick. — Apply fourteen leeches. Repet. pilul. calom. gr. xx.; pulv. antim. gr. vj.; h. s. s. Cont. frictio et mist. salin. ut antea.

30th. — The pain in his belly quite gone since the leeches were applied; his tongue is clean and healthy; no pain in his head; pulse good. — Mist. purg. $\bar{\text{z}}$ jv., natron. vitriol. $\bar{\text{z}}$ ss. add. Cont. frictio et pilul. ut antea.

31st. — Head still rather giddy; tongue cleaner; no pain at all in his belly; pulse 74, rather sharp and hard; throbbing behind his ears. — Apply twelve leeches behind each ear. Repet. mist. purg. cum natron. vitriol. $\bar{\text{z}}$ ss. add. Cont. pilul. et frictio.

Evening. — Pulse fuller than usual, and vibrating; head better; stools as before. — Cont. pilul. ut antea. Cont. frictio, et pulv. Doveri, gr. xv.

February 1st. — Stools getting quite natural; tongue becoming much cleaner; head much better; the twenty-four leeches yesterday morning did him good; pulse 84, distinct, and regular; no pain in his belly; mouth rather tender. — Cont. mercur. frictio, pilulæ, et mist. purg. ut antea.

Evening.—Head better; tongue cleaner; pulse softer; feels soreness where the leeches were applied.—Cont. pilul. et haust. amar. ut antea. Foment his belly. Rub in unguent. mercur. ut antea.

2d.—Tongue clean and natural; stools natural; the throbbing pain in his head is relieved; pain in his belly diminished; pulse 78 in a minute.—Cont. pilul. et haust. ut antea. Cont. frictio.

Evening.—Tongue cleaner; stools feculent, the appearance of fermented matter.—Cont. pilul. et haust. Cont. frictio.

3d.—Stools quite feculent, natural, and copious; tongue clean; head still painful.—Apply twenty-four leeches to his temples. Mist. purg. \bar{z} jv., magnes. vitriol. \bar{z} ss. add. Cont. foment. et frictio.

Evening.—Head better since the leeches; stools more natural; less pain in his belly.—Cont. pilul. ut antea. Cont. haust.

4th.—Stools copious and crude; tongue clean; head better.—Mist. purg. ut antea.

Evening.—Head getting better daily, and his stools natural.—Cont. pil. ut antea.

5th.—Headach and giddiness removed; stools crude.—Mist. purg. \bar{z} jv. ut antea.

6th.—Much better; headach gone; stools natural; tongue clean.—Cont. mist. purg. \bar{z} jv. ut antea.

7th.—Head much better; pulse quite natural; tongue clean; stools natural.—Omit. pilul. Cont. haust. purg.

8th.—Head quite well; he is only weak.—Repet. haust. amar. ut antea.

Evening.—Tongue not so clean; pulse fuller and quicker, 92.—Calom. gr. xij.; pulv. antim. gr. vj.; syrup. q. s. Ft. pilul. h. s. s.

9th.—Tongue cleaner; stools tenacious and feculent.—Mist. purg. \bar{z} jv.; magnes. vitriol. \bar{z} ss. M.—*Evening.* Cont. haust. amar. cum sennâ, \bar{z} ij.

10th.—Recovering.—Cont. haust.

11th.—No complaint but weakness.—Cont.—13th. Discharged.

Remarks.—We have given this case as it stands in the hospital books. The number of leeches employed in it is perhaps the greatest we have on record, considering the size and operation of Indian leeches. Fifty were applied on the day of the patient's admission and on the one following it (the 6th and 7th), and 112 more on the 11th, 12th, and 13th, making in all, from the 6th to the 14th, 160. Upon the relapse which he experienced on the 26th, leeches were again applied, and from that day to the 3d of February, 140 were ordered. Thus, in a month, 300 leeches were ordered to this man. It would most probably have been better that general blood-lettings had been prescribed at the commencement of the disease, and carried to the extent of making a decided impression upon the pulse. The patient was at first under

the care of the assistant-surgeon of the regiment; but finding that he made no progress, we took charge of him. The time, however, had then gone by at which general depletions could have been practised with advantage. This case was one of great difficulty, and in which the visceral complications were most obstinate. The detailed history of it which is given above renders any further observation unnecessary.

CASE CCXXVII. — *Fever. — Recovery.*

PATRICK M'CUE came into hospital on the 30th December, 1816, with foul tongue, feverish skin, quick pulse, and great pain about the epigastrium. An emetic was given, a saline purgative, and seventy leeches were applied with great benefit. He is now better. — Took last night calom. gr. xij.; pulv. antim. gr. jv. Ft. pil. Mist. salin.

January 1st, 1817. — Pulse very quick and small; tongue cleaner than it was yesterday, but still foul, and whiter than natural; had no sleep last night, but had no pain; stools scanty, of a pale colour; no blood. — R Mist. purg. ℥iij.; magnes. vitriol. ℥ss. M. ft. haust. stat. Cont. mist. salin. ut antea.

Evening. — Pulse small and quick, feels great weakness; skin hot and rather dry; stools copious, with flakes of white mucus and feculent matter; no pain at all. — Calom. gr. xx.; pulv. antim. gr. jv.; syrup. q. s. Ft. pilul. h. s. s. Omit. mist. salin. R Pulv. Doveri, gr. xv.; mist. camph. ℔j.; spirit. æther. nitros. ℥ss. M.; a wine-glassful every two hours.

2d. — Pulse 124; stools scanty and offensive; tongue foul as before; heat of skin not increased; feels general soreness over his body, but no particular pain in his belly; has no sickness. — Repet. mist. camph. ut antea. R Mist. purg. ℥jv.; natron. vitriol. ℥jss. M.; a glassful every hour till he is fully purged. Enema purg.

Evening. — Stools copious, with flakes of mucus and feculent matter; tongue foul, but moist; skin hot and rather dry; pulse small and quick. — Warm bath. Pulv. Doveri, ℔j. h. s. s. Calom. gr. xv. Pulv. antim. gr. jv. h. s.

3d. — Pulse 86 in a minute; skin cooler; he perspired a good deal in the night; feels much easier; stools watery and feculent; tongue still foul. — Mist. camph. ut antea. Mist. purg. ℥jv., magnes. vitriol. ℥ss. add. Tamarind water.

Evening. — Pulse 96; tongue cleaner; skin moist, and a general perspiration; stools watery and feculent. — Repet. calom. gr. xij. h. s. Repet. pulv. Doveri, ut antea. Repet. mist. camph.

4th. — Tongue foul and yellow colour; has perspired a good deal in the night, and is now in a free perspiration; pulse 96 and small; stools copious, watery, with some pale-brown fæces floating on the surface; he has a bitter taste in his mouth; no pain

in his belly at all. — Pulv. ipecac. ʒj.; antim. tart. gr. j.; aquæ puræ, ʒj. M. ft. pulv. emetic.

Evening. — Has been vomited, and has passed green bile; stools crude, of a clay colour, and very offensive; pulse small and frequent; tongue foul; no pain in his belly, but on pressure he feels some pain in the scrob. cordis. — Calom. gr. xij.; pulv. antim. gr. vj.; opii, gr. j.; syr. q. s. Ft. pilul. h. s. s. R Mist. salin. febrif. ʒbj.; spirit. æther. nitros. ʒss.; vin. antim. ʒss. M.; a wine-glassful every two hours. Omit. mist. camph.

5th. — Great thirst; no sleep; tongue still foul and yellow; skin dry, not hot, but warm; pulse 92, softer and more distinct; no pain at all; stools watery, of a pale-green colour, mixed with fæces. — Mist. purg. ʒjv.; natron. vitriol. ʒj. M. statim. Cont. mist. ut antea.

Evening. — Tongue still foul; no pain or uneasiness; great thirst; pulse 90. — Calom. gr. xij.; pulv. antim. gr. vj.; syrup. q. s. Ft. pilul. h. s. s. Tamarind water. Cont. mist. salin. ut antea.

6th. — Pulse 100, rather hard; tongue still foul and yellow, but moist; stools watery, with fæces. — Pulv. purg. Enema purg. Cont. mist. salin ut antea.

Evening. — Stools crude and feculent, copious and watery; tongue the same; pulse a sharp beat; complains of great weakness and depression. — Repet. mist. salin. Pilul. calom. gr. xij.; pulv. antim. gr. vj. Ft. pilul. h. s. s. Sago.

7th. — Pulse sharp and hard, 105; tongue foul, and of a dark-yellow colour; says he has no pain at all; stools small, but feculent and natural; on examining his belly, he says there is no pain, but we feel a fulness, and, from the expression of his countenance on examination, we are sure there is pain; tongue indicates great derangement; and we think there is something wrong about the duodenum and the hepatic ducts. — Apply sixteen leeches to the scrob. cordis. Repet. pulv. purg. Enema purg. Cont. mist. salin. ut antea.

Evening. — Pulse 115, sharp and quick; his tongue is dry and furred, as before; stools watery, with feculent matter; the leeches have bled, but he still says there is no pain; there is great excitement, from some cause; his skin is dry, and feels greasy. — R Calom. gr. xx.; pulv. antim. gr. jv. Ft. pilul. stat. cap. Pulv. Doveri, ʒj. h. s. s. Sponge his body with vinegar.

8th. — Pulse 106, still sharp, but weaker; tongue cleaner and moister; skin moist; perspired a great deal in the night; stools small and more feculent. — Pulv. purg. Cont. mist. ut antea.

Evening. — Much better; tongue cleaner; pulse the same. — Repet. pulv. Doveri, pilul., et mist. ut antea.

9th. — Pulse small and quick; tongue foul and dry; skin cool and natural; stools more natural. This man will not be prevented eating all manner of trash, which keeps up the excitement and derangement of his stomach and bowels. — Mist. purg. ℥jv. Cont. mist. ut antea.

Evening. — Pulse the same as morning; tongue moist, but furred and foul; stools morbid, offensive, and of a pale lead colour; skin moist. — Repet. calom. gr. xx. h. s. et pulv. Doveri, ut antea.

10th. — Tongue foul and yellow; stools more natural, and of a very good colour; has no pain; perspired a good deal; skin cool; pulse 100, softer and less hurried. — Mist. purg. ℥jv. Cont. mist. ut antea.

Evening. — Stools watery, copious, and mixed with feculent matter; tongue foul and yellow, but moister and cleaner than it was; pulse small and frequent, as before; no pain at all. — Calom. gr. xij.; pulv. antim. gr. jv.; syrup. q. s. Ft. pilul. h. s. s. Cont. mist. salin. febrif.

11th. — Tongue cleaner and less furred; stools feculent and watery; pulse still quick; skin not unusually hot. — Pulv. purg. Cont. mist. ut antea. Sago.

Evening. — Tongue much cleaner; stools copious and more feculent; skin cool; no pain at all; but pulse still quick and small. — Repet. pilul. calomel. ut antea. Haust. anodyn. h. s. s.

12th. — Stools becoming perfectly natural; tongue cleaner; pulse still quick, and he has great weakness. — Pulv. purg. Cont. mist. ut antea.

Evening. — Tongue cleaner; stools more natural; skin cool; pulse natural; no pain. — Pilul. hydrarg. cum calom. et pulv. antim. three times a day. Haust. amar. cum sennâ, ℥ij. nocte maneque.

13th. — Tongue much better and cleaner; pulse not so frequent; had no stool in the night. — Pulv. purg. Cont. mist. et pilul. ut antea.

Evening. — Tongue foul, and not so moist as it was; stools feculent; pulse quick and small, as before. — Repet. pilul. ut antea. Haust. amar. Mist. salin. febrif. ut antea.

14th. — Stools natural, but his tongue is foul; skin moist; pulse still quick; no pain; has some appetite. — Repet. pilul. et haust. Cont. mist. ut antea. Chicken soup.

Evening. — Tongue cleaner; stools natural. — Repet. pilul. et mist. amar. ut antea.

15th. — Tongue dry and furred; stools perfectly natural and formed; pulse quick; skin cool; appetite a little better. — Repet. mist. salin. febrif. Repet. pilul. et haust. amar. ℥j. ut antea.

Evening. — Has no complaint now but weakness; his stools are perfectly natural; pulse small and quick, as before. — Repet. pilul. Haust. statim. Mist. ut antea.

16th. — Tongue clean; stools natural; pulse natural. — Cont. med. ut antea.

17th. — Stools perfectly natural; tongue cleaner; pulse not so quick; skin cool. — Cont. med. ut antea.

From this time he recovered fast, and was discharged, perfectly well, on the 25th.

CASE CCXXVIII. — *Fever from Retention of Fæcal Matters, owing to Stricture of the Rectum.*

WILLIAM BRIMLY, ætat. 26, admitted 16th July, 1816: complains of a heavy pain about the epigastrium, sickness at stomach, and pain in the head, loins, and limbs; bitter taste in his mouth, and griping pains in his belly; skin pretty cool; pulse full and frequent; tongue foul. — R Mist. emet. stat. Enema emoll. Pilul. calom. gr. xx. h. s. Apply fourteen leeches to the pit of his stomach.

17th. — Threw up much bile; his headach and giddiness are the same; has still pain in the pit of his stomach; the leeches removed the pain in his belly; he is not much strained; tongue moist, not very foul; pulse 96. — Mist. purg. ℥ij. Apply a blister to the pit of his stomach.

Vespere. — Headach continues, and he has much sickness at stomach; foul tongue; the blister has risen well, and is so painful that he does not know how the original pain is; pulse full and frequent. — Mist. emet. stat.

18th. — The vomit brought up an amazing quantity of bitter, black, bilious matter, which relieved his head very much; was much troubled with tormina and tenesmus in the night, and passed pure blood; very little pain in his belly; tongue foul; less thirst; pulse good; skin moist. — Mist. purg. ℥ij. Enema emolliens.

Vespere. — Tongue white and furred; purged well; stools watery; no pain in his belly at all; pulse good; headach relieved; but he strains very much, and has pain in ano. — Apply ten leeches apud anum. Enema emolliens. Haust. amar. cum sennâ, ℥ij.

19th. — No pain, except in the fundament; had no stool; tongue white; no pain in the sacrum at all. — Sit over warm water. Mist. purg. ℥ij.

Vespere. — Stools more feculent and copious; pain continues in the same situation. — Enema ipecac. Pulv. Doveri, gr. xv. h. s.

20th. — Much straining; cannot pass his stools at all; feels wind rumbling through the bowels, but cannot pass it. We are sure there is stricture in the rectum. — Mist. purg. Continue to sit over warm water.

Vespere. — Has been well purged; stools watery, mixed with dissolved fæces; feels

hirst; tongue white, and rather dry. — Enema anodyn. Mist. salin. febrif. ℥j.; spirit. æther. nitros. ʒij.; vin. antim. ʒss. M.; cochlear. ij. ampla, secundis horis sumend.

21st. — Feels ease in the rectum this morning; complains of much flatulence; stools watery, but natural colour; tongue cleaner. — Repet. enema anodyn. bis in die. Repet. mist. ut antea, et aquæ ammon. ʒj. add.

Vespere. — Much easier since the enema was given, but cannot pass his stools; headach. — Calom. gr. xij. h. s. Repet. enema anodyn. Apply ten leeches to each temple.

22d. — His head is much relieved by the leeches; was purged a good deal in the night; felt easy while he was purged, but the moment the purging was over the pain returned; tongue very foul; pulse quick. — Repet. enema anodyn. Repet. pulv. purg. Mist. salin. febrif.

Vespere. — Endeavoured to pass a full-sized urethral bougie, and could not introduce it more than three inches, when it met with a formidable resistance; he passed his stools better after it, and with some fæces; feels better. — Enema anodyn.

23d. — Passed a good deal of wind downwards, which he has not done for many months; felt easy during the night, but towards morning he was seized with griping pain in his belly, and could not pass his stools; the pain in the rectum much easier this morning; complains of pain at the top of his head; a small bougie passed the stricture about four inches up the rectum. — Pulv. purg. Enema anodyn. Cont. mist. salin. ut antea.

24th. — Felt very easy all night, and had no pain; he had no stool. — Enema anodyn. Enema purg. vespere. Pulv. purg. h. s. s.

25th. — Pain in his head and breast; pulse good. — Haust. anodyn. cum aquæ ammon. ℥xx.; ol. menth. pip. ℥ij. M. Enema anodyn. h. s.

26th. — Felt much easier during the night than usual, and has very little pain in ano; has passed a great deal of flatus; his tongue is foul; he complains of pain in the scrob. cordis; and on examination, we find some enlargement about the liver; has not had a stool; introduced a second-size bougie past the stricture. — Pulv. purg. Enema purg. Apply eight or nine leeches to the part. Pilul. hydrarg. no. 1. nocte manequ.

27th. — Passed a very restless night, and was straining frequently, but, after being purged, was greatly relieved this morning; tongue cleaner than usual; pulse good; the pain in his right side and scrobiculus cordis continues. — Mist. purg. ʒij. Repet. enema, ut antea. Passed more feculent matter in his stools than we have yet seen, with hardened fæces; complains much of pain in the region of the liver and course

of the colon. — Calom. gr. xx. h. s. Enema anodyn. Apply a blister to the right hypochondrium; and rub in ʒj. unguent. mercur. nocte maneque.

28th. — Introduced a larger bougie than usual this morning, without any pain or much resistance; he has passed a very restless night, and says the pain in the colon is removed to the lower part of his belly; at any rate, it is much better; the blister has risen well; he has no straining; tongue moist; we much fear there are more strictures higher in the canal; headach better. — Mercur. unguent. ʒj. nocte maneque. Pulv. purg. stat.

Vespere. — Has been well purged to-day, and did not feel the great uneasiness he formerly complained of after the operation of the medicine; feels easier generally; pulse good; vomited what he has taken. — Repet. enema anodyn.

29th. — Passed a second-size bougie with tolerable ease; he had a very good night, and feels better this morning; has no vomiting. — Pulv. purg. Repet. enema ut antea.

Vespere. — Stools more copious and feculent; passed his stools without pain, and has no pain afterwards; head aches a little; mouth affected. — Haust. anodyn. Repet. enema, ut antea.

30th. — Feels very little pain in the rectum, but has pain in his right side; he is not quite sure whether it is the blister or the old pain. — Mist. purg. ʒij. Cont.

Vespere. — Passed more feculent matter than he has yet done; no pain afterwards at all. — Haust. anodyn.

31st. — Feels generally better, except the headach, which still continues; has no pain at all in the rectum, and he passes fæces with perfect ease. — Mist. purg. ʒij. Cont. ut antea.

Vespere. — Stools perfectly feculent, and he feels quite easy, but had more straining to-day than usual. — Haust. anodyn. Enema anodyn.

August 1st. — Passed a bougie smeared with mercurial ointment, and it gave him some relief this morning. — Enema anodyn. stat. et h. s. Mist. purg. ʒij.

2d. — Feels much easier and better this morning; was well purged in the night; no pain in the rectum at all; tongue cleaner; has some pain in his shoulder. — Repet. enema ut antea. Haust. amar. cum sennâ, ʒij. h. s.

3d, *Vespere.* — Haust. anodyn.

4th. — Much better in every respect; passes his stools formed, which he has not done for many months past; the pain in his head is removed, and, in short, he is almost well: we expect exercise and change of air will be useful to him.

5th. — Discharged.

SECTION IV.

Cursory Remarks on some of the chief Means of Cure employed in Fevers in warm Climates.

Our remarks at this place will be brief, as we wish to state merely the bare result of our own observation.

Blood-letting.—This powerful agent in the cure of intertropical fevers is required in two different states of the system, namely, in that of excitement and increased vascular action, and in that of general oppression and local congestion. In the former state of system, the excitement or vascular action may be general, and without any one organ furnishing proofs of greater disease than another, or the vascular excitement may be concentrated in one or more organs or textures, forming local determinations or inflammations. In cases of this kind, blood-letting should be chiefly general, or from a vein, and accompanied with alvine evacuations and cooling diaphoretics. In the latter state of system, the vascular depletion is employed to remove general oppression and local congestion, by proportioning the body to be moved to the moving power. In cases of this description, if the oppression is general, the pulse labouring and undeveloped, and the internal functions betray difficulty of action rather than inability, the blood should be abstracted from a large vein; at the same time diffusive stimulants may be employed both internally and externally. Care should be taken to discriminate between the state of oppression and that of actual debility and exhaustion: in the former, blood-letting is imperatively demanded, and always attended with benefit; in the latter, it is most mischievous. When the congestion is local, and not accompanied with much general oppression of the frame, local depletions are sufficient; and the leeches in India are capable of making a local depletion to almost any extent.

Whenever bleeding is required to an extent beyond twenty or twenty-four ounces, the physician should remain with his patient during the depletion, and attentively observe its effects upon the pulse and countenance, and the relief obtained from it by the patient. If the expression of countenance improves, and the pain be relieved, but no change has taken place in the state of the pulse, bleeding may be continued till the pulse becomes more dilated, softer, and more distinct. At this period, bleeding may be stopped, though complete relief is not obtained; and if, in the course of a few hours, pain or oppression should return, then leeches may be applied with safety and advantage. Bleeding, like the misapplication of the most useful medicines, if carelessly or injudiciously practised, may prove injurious to a patient. It is a matter, therefore, of the greatest importance to the successful treatment of inflammatory and febrile diseases, as well as those characterised by oppression and local congestion, that the practitioner should know when general or local bleeding should be used; because, if general bleeding be resorted to where local bleeding is indicated, much injury may arise; and if, on the contrary, local bleeding is used when the other is required, although the same danger will not follow, the same good effects will not be produced, and the disease will be thereby protracted. This is a point, therefore, of much importance in practice, and well deserving the attention of the practitioner.

As leeches diminish action without destroying power, and as there are cases of congestion which can only be relieved by depletions of this kind when purgatives fail, depletion in this way is particularly necessary in persons of advanced life, whose constitutions have been impaired by study, business, sedentary occupations, or long residence in warm climates. Where congestions take place in the larger viscera, and the abstraction of blood to relieve the organs so affected,—after all other means have failed,—becomes absolutely necessary, leeching or cupping may be used with every advantage, although general bleeding might be attended with danger. But, on the other hand, where there is great excitement in the system generally, the person being of a full plethoric habit, general bleeding will be used with every prospect of success. After a full depletion is made in the first

instance, and before any structural or organic changes have taken place, farther excitement of the system may always be kept under by leeches. We recollect an instance of an officer having received a very severe wound between the fourth and fifth ribs, which produced such inflammation in the chest, as to deprive him of the power of breathing. We bled him to a very great extent before he could breathe freely. About seventy ounces were taken at one time from his arm; and thus the vascular action was subdued and reduced so fully under control, that we could at any time afterwards overcome pain by the application of two or three leeches. That officer is now perfectly well, and in England.

When leeches are resorted to, a sufficient number should be applied to remove a certain quantity of blood, and especial care should be taken to stop the bleeding the moment they fall off. When the blood is thick, as it is in most cases of congestion, there will be no difficulty in arresting the hæmorrhage; but when the excitement of the system is great, and the blood in a high state of oxygenation, and thin from previous depletion, there is great difficulty in stopping the bleeding. We have seen, where attention had not been paid to these matters, the most disastrous consequences occur from neglecting the bites after the leeches have fallen off.

Very erroneous notions are entertained regarding bleeding in a warm climate, and very wrong impressions often given to medical men on their first arrival in India, namely, that *blood is not easily made in India*. There is much difference between the unreserved and careless manner in which bleeding is often ordered, without any distinct or defined object, and where it is directed by judgment and professional tact, with a clear object in view,—whether that be to relieve the system from oppression and local congestion, or to subdue general increased action and local inflammation. It is not, therefore, that bleeding is bad, but that it may be misapplied, and thereby abused. In the whole course of our practice, we never ordered a bleeding above twenty-four or twenty-five ounces without standing over the patient, and watching carefully the effects, and we were always guided as to the quantity to be abstracted by the state of the pulse, the expression

of countenance, and the relief experienced by the patient. When we found the pulse become fuller and softer, from scarcely being able to feel it at all, we concluded the system was being relieved from oppression, and we allowed the blood to flow till this change was effected. It frequently happens, that after taking what is called a large bleeding, further depletion is stopt before complete relief is obtained, and this often does harm, or, at least, not being attended with the expected relief, raises doubts of its utility. In the abstraction of blood, therefore, in those cases, nicety and tact are required, and if this peculiar change is not carefully watched and clearly understood, that advantage which would attend the judicious management of depletion is lost.

Emetics are amongst the most beneficial remedies in checking the progress of fever, or in mitigating their severity, if employed sufficiently early in the disease, before vascular action runs very high, and when the stomach and liver furnish no symptoms of inflammatory action. The emetic which we generally prefer in this state of fever, is that consisting entirely of ipecacuanha, as being the least injurious to the mucous surface of the stomach and bowels. Emetics may be also employed in the more advanced periods of fever, when the object is to evacuate offending matters from the stomach, and rally the system from collapse. But they require, at these stages, the utmost discrimination; for if the stomach, liver, or spleen, be diseased, they may be productive of serious evil.

Purgatives.—The remarks offered respecting this important class of remedies in the foregoing sections, leave us little to add respecting them at this place. The exhibition of purgatives, on almost all occasions, should be preceded by a large dose of calomel, in order to prepare the secretions of the liver and bowels for their subsequent operation. The calomel may be given alone, or combined with opium and James's powder, according to the circumstances of the case, and generally exhibited at bed-time, unless when blood-letting is employed early in the day, when the calomel should follow the vascular depletion, and be repeated at night. A purgative draught should always follow the dose of calomel, at the termination of from three to six

hours, and its action be promoted by a cathartic enema. Afterwards, purgatives should be given, consisting chiefly of calomel at bed-time, and any other substance whose operation on the bowels is most decided and least offensive to the stomach, so as to remove all morbid accumulations and secretions poured into the alimentary canal. The practitioner should recollect, that the evacuation of the bowels at the commencement of fevers, although most indispensable, should not prevent him from employing purgatives during the subsequent stages of the disease; for it is often astonishing how great a quantity of morbid secretions and fæcal matters will accumulate even in the space of twenty-four hours, requiring to be removed from the *prima via*, and producing most serious disturbance on the sensible mucous surface of the intestines, if allowed to remain. The purgatives usually employed by us in fevers have been frequently mentioned in the course of the Work and in the preceding sections; and the reader will find the formula in which we have used them, in the First Volume of the Work.*

Diaphoretics are an important class of medicines in all febrile diseases, but especially in idiopathic fevers, and should be exhibited from time to time, with a view of diminishing vascular action, and determining to the surface of the body. When the excitement of the vascular system is general, James's powder is perhaps the best diaphoretic we can employ. It may be combined with calomel, and given at bed-time; whilst the camphor mixture with the liquor ammoniæ acetatis, nitrate of potass, and vinum antimonii tartarizati, may be taken every two or three hours through the day. Whenever the heat of skin is increased, and the action of the heart augmented in energy, the diaphoretics should be of a cooling and sedative kind. It is in this state of the system that the antimonial diaphoretics are most beneficial. When there is determination to the head or to the liver, without irritation of the stomach or digestive mucous surface, they are especially required. When, on the other hand, the mucous surfaces, particularly those of the abdomen, are affected, the pulvis ipecacuanhæ compositus is most beneficial.

* See pp. 253—8.

In those cases attended with oppression of the system generally, or with local congestion, and still more especially in those characterised by collapse of the powers of life, or an adynamic state of the frame, the more diffusible diaphoretics are indicated, such as camphor with the liquor ammoniæ acetatis, the spiritus ætheris nitrici, spiritus ammoniæ aromaticus, the carbonate of ammonia with lime-juice, &c. In cases of congestion of the liver, and when we have reason to suppose that the gall-bladder and hepatic ducts are loaded with inspissated bile, we have often fancied that advantage was derived from the saline diaphoretics in the form of effervescing draughts with excess of the alkali, and with large doses of the spiritus ætheris nitrici, it seemed as if this class of medicines acted by relaxing the ducts, and rendering the bile more fluid and more capable of circulation through the congested vessels.

Amongst the class of *febrifuge tonics* which may be resorted to, either with a view of preventing the return of the paroxysms of periodical fevers, or of restoring the sinking energies of the frame, *bark* or its active principle, the quinine, still holds the first rank. We have already stated enough in the foregoing sections as to the impropriety of exhibiting this valuable medicine until increased vascular action, general and local, until general oppression and local congestions, and until alvine accumulations and morbid secretions, are all and severally removed. These objects being attained, the bark is a most valuable remedy, either for the purpose of preventing the return of the febrile paroxysm, or for rallying the sinking energies of the system. If it be given when any one or more of the above conditions of disorder exists, it will not only fail in producing its febrifuge effects, but often be productive of obstruction, local determinations, and inflammatory action in some of the abdominal viscera.

When bark is given for the purpose of preventing the return of the paroxysms of periodical fever, it should be exhibited in as large and decided doses as the stomach will bear; and, in order that it may not offend this viscus, it may be given combined with ammonia, opium, and any of the hot spices, which abound in warm climates. When bark is employed in order to

support the system in the advanced stages of the continued form of fevers, the lighter preparations of it should first be tried; such as the cold infusion and the decoction. The former of these two preparations has always been a favourite with us in Indian practice, in the latter stages of the continued fevers occurring in the hotter provinces of Hindostan: but in the latter stages of the more severe fevers, and in those which assume the malignant or adynamic state, this remedy must be employed in substance, decoction, and tincture, combined with energetic stimulants, small doses of opium, aromatics, and antiseptics, and given in as large doses as the patient can retain.

Not only should the practitioner be careful that morbid accumulations are removed before the exhibition of bark is commenced, but he should also resort to purgatives or laxatives, from time to time, according to the appearance of the evacuations; and he may often combine the preparations of this substance with various purgatives, in order to obtain the effects of both. In almost all the fevers of warm climates, the state of the biliary functions and of the secretions of the alimentary canal requires that calomel in full doses should be given, generally at bed-time, and followed by a purgative draught and an injection early on the following morning.

With respect to the employment of *arsenic* in the intermittents of warm climates, it will not be requisite to say much. We have found the arsenical solution a powerful remedy when judiciously prescribed, especially after the deranged secretions and morbid accumulations have been carried off by the use of calomel and purgatives. But we conceive that it is much more likely to induce inflammatory derangements of the liver, or of the stomach and large bowels, than the judicious use of bark is. We say judicious, because we consider that both the benefits and the evils which result from the employment of bark are entirely owing to the nature of the treatment which has preceded its employment, and which is resorted to while the bark is being prescribed. Many of the cases of hepatic and dysenteric disease which have come before us as a consequence of ague, have evidently been owing, in our estimation, to the neglect of depletion and free purgation on the invasion of the febrile disease, owing to which, congestions and obstructions had been

readily converted into inflammatory action, by the exciting and irritating effects of the arsenical preparation employed to arrest the fever. This was particularly brought to our notice in many of those troops employed in the expedition to Java, who had been previously in Holland. The majority of those who were seized with hepatic disease and dysentery upon their arrival in India had been treated shortly before with arsenic, in order to remove remittents and intermittents, frequently with little or no attention having been paid to the state of the bowels and hepatic functions, either previous to, or during, the employment of the arsenical solution.

Cold Affusion, &c.—The cold affusion is a valuable adjuvant in the treatment of the early stages of fever, when the skin is hot and dry, and no internal organ particularly affected. Vascular determination to the head, however, does not forbid its use, provided that cold applications be kept constantly applied to it. When, however, the stomach, liver, lungs, spleen, or bowels, are much affected, and particularly in the more advanced stages of fever, the cold affusion is inadmissible. In cases of this kind, however, if the skin be hot, harsh, or dry, or if the surface is moistened merely by a scanty perspiration, sponging it with tepid or cold water, or vinegar and water, is often of service. In this state of disease, also, the tepid bath is generally beneficial. When the surface, and especially the extremities, are cold, or their temperature at all beneath the natural standard, the hot bath, or the vapour-bath, followed by very active frictions, particularly of the lower extremities, is extremely serviceable, and a powerful adjuvant to other means in rallying the energies of the system. Where the internal viscera become much engaged in the progress of the disease, and especially if the bowels are much deranged, the warm bath is often of great service, when well managed, and made subsidiary to a judicious and decided method of cure.

Drink, Beverages, and Diluents.—The common drink of patients, in fever, is a matter of much importance. During the state of high vascular action, this should be as cooling as possible. Water saturated with cream of tartar, tamarind water, and water made pleasantly acid with recent lime-juice, are extremely grateful to the patient, and not incompatible with the means of

cure recommended. They may be also used to any extent by the patient, and are admissible at all stages of the disease, and almost in every complication it may present. When the powers of life are sinking, wine may be added to the cream of tartar solution with advantage; and when the functions of the liver are obstructed, or in a state of torpor, water made agreeably acid with equal proportions of the nitric and muriatic acids is both pleasant and serviceable. When the spleen is enlarged, this is a most excellent beverage, and calculated to prevent an increase of this lesion, as well as altogether to remove it. In the last stages of fever, spruce beer, cider, soda water, ginger beer, bottled porter, are all relished by the patient, and serviceable in supporting the energies of the frame.

SECTION V.

Cursory Remarks on the Treatment of Febrile Attacks in the Natives of India.

BEFORE we enter upon our remarks on the treatment of the natives, in fever, we shall premise a few observations on their mode of living, habits, and constitution, as influencing their liability to disease, and the method of treating it. The diet of the natives of India consists chiefly of rice, ghee (a kind of clarified butter), chillies or hot spices, curries, various kinds of vegetables, milk, salt fish, tamarinds; and many, particularly the Mahomedan population and the Pariahs, eat animal food. Amongst the higher classes and better-fed, who have little labour, this diet is sufficiently nutritive and wholesome, and we generally observe these fat, sleek, clear-skinned, and healthy; while the labouring classes, and particularly the poor, are thin, weak, dry and scaly-skinned, and prone to disease. It is chiefly amongst this latter class that fevers and derangements of the digestive and assimilating organs occur.

The ranks of our native army consist of all classes and castes,—Rajahpoots, Mussulmen, Gentoos, Pariahs, Malabars of all castes, labourers, tillers of the ground, and artisans of all descriptions; and it is chiefly among this latter class that most sickness prevails. Disease is also often prevalent amongst the Pariahs; but this arises more from intemperance and irregularities than from any other cause. The Rajahpoots, Gentoos, and Mussulmen, are the most healthy troops, generally speaking; but on active service, or for enduring fatigue, we consider that the Pariahs are equal to the Mussulmen, and that the Gentoos are more efficient, and capable of bearing greater fatigue, than the Rajapoot and Malabar classes. This difference can arise from no other cause than the different modes of living which they adopt, the better fed being those most capable of enduring fatigue and exertion.

We have generally remarked, that poor living and improper or innutritious diet amongst the natives are chiefly productive of dyspeptic complaints, accumulations of morbid matters in the alimentary canal, intestinal worms, diarrhoea, rheumatism, cutaneous affections, and other diseases of debility. But there is another source of disease prevalent amongst the sepoys, and which tends greatly to modify the character of their complaints, and consequently the treatment required to remove them. We allude to their habits of gross sensuality and intercourse with women. In order to heighten their desires, they partake of every stimulant and provocative within their reach. Those who do not drink intoxicating liquors, use opium in large quantities, and other narcotics: their unbounded sexual indulgences, and the means they take to excite their appetites, necessarily lead to exhaustion of the tone and energy of the system, and premature decay; and as venereal complaints are very common among them, it may be considered as being more or less engrafted on their constitutions, and connected with the various forms of cutaneous diseases which are so common amongst them.

As our Indian territories are now so very extensive, attention to the diseases of the natives becomes an important part of the duties which an officer proceeding to that quarter of the world is called upon to perform; and in order that he may pay it with satisfaction to himself and to those whom

he will have to treat, deference should be paid by him to their prejudices and superstitions. In the management of their diseases, we should always recollect that they cannot bear cold, and that, as soon as the signs of vascular action are subdued, nourishment and support are indispensably requisite to their recovery, taking care at the same time to keep up a gentle action in their bowels by means of warm stomachic laxatives, and tonics combined with gentle purgatives.*

* The natives dislike to sleep on European cots. This we remarked when the Native Hospital at Arnée was under our charge. But there is a kind of native bed which we think may be adopted with advantage for natives. These beds are to be procured in all villages; and if some arrangement were made, native hospitals might be supplied with them; or if these are not to be procured, some measure should be adopted to allow the sepoy paillasses and quilts in all hospitals. From the peculiar nature of their habits and constitutions, they are ill able to support cold; and thus from the want of some arrangement of this kind, many men have been lost to the service. The sepoy generally lives with his family, as the barracks for native troops are usually merely places for arms. Their families live in little huts in some dry and comfortable part of the cantonment near the barracks; these huts are floored, and covered with a wash of cows'-dung and water, which makes a very nice cement, and a clean, comfortable, dry floor; there is very little air admitted, and the hut, in cold weather, is warm and comfortable; and in hot weather, it is surrounded by a small wall or the wall of a tent, and the space between this wall and the hut is floored in the same way, so that the family are perfectly private, and sleep in the open air. This is the manner in which the sepoy usually lives while in health; but when sick he is removed to an hospital.

The hospital is generally a part of the barracks or place for arms: he brings with him his small carpet, and perhaps a cumly cloak. The barrack is a long cold shed, with a chunam [lime] floor, sufficiently protected from rain, but certainly not from wind; the sepoy, therefore, is exposed in this long cold barrack, with nothing but his cumly cloak and carpet. If he be affected with febrile excitement, this will not be much felt; but if he be ill of dysentery, rheumatism, or any other disease, the coldness of the hospital will certainly lay the foundation for most formidable derangement, and has, we are sure, deprived the service of more men than any other cause whatever; because, under such circumstances, it is almost impossible to *cure* disease amongst the natives. We merely mention the fact in order to draw attention to it. In all stations above the Ghauts, cumlies are furnished to the sick; but cumlies are not sufficient; and we submit, with deference, that every native hospital should have country cots, paillasses, and cumlies, provided for them,—in cold countries at all times, and in warm countries during the cold weather. We must explain what we mean by cold countries. All countries above the Ghauts, where the nights and mornings are always cold, though the day may be exceedingly hot, may be so denominated; the warm country being below the Ghauts, where the temperature is more equal, except in the monsoon and cold season, *i. e.* from October to April.

The natives of India cannot bear cold or wet, and they generally suffer more in cold wet weather than Europeans; in damp, swampy countries or districts, they invariably suffer from fever, which seldom runs sufficiently high amongst the Hindoos to require venesection; though amongst the Mahomedans and the Pariah caste, this depletion is often necessary. From their habits and diet, the Hindoos have not much stamina to resist disease, and their powers of life are soon overcome by it; consequently, considerable congestion often takes place in the larger viscera, viz. the liver and spleen, while the powers of life are not sufficiently powerful to produce that action which leads to acute hepatitis; and we, therefore, seldom see abscess formed in the liver amongst them, though its functions are often impaired so as to lay the foundation for a great deal of visceral derangement, occasioning wasting of the body; dry, parched, and cold skin; diarrhœa; enlargements of the spleen; and various other diseases of debility. If these derangements are suffered to remain long without being removed, the patient often sinks suddenly, or a state of disease is produced from which they seldom or never recover, though they may linger for years.

A day, or even a few hours, will make a very great difference in the state of febrile diseases at their commencement amongst the natives; therefore, close attention on the part of the medical officer is a matter of the most serious importance, both as relates to the lives of those placed under his charge, his own reputation, and the general good and efficiency of the service. The medical officer, accustomed to treat strong and vigorous Europeans, where vascular action is generally high, is forced to observe the rapidity with which disease runs its course, and the necessity of bold and decided measures to check it. Not so, however, with the natives: in them fever often has more the appearance of debility and want of power, and would, to a common observer, or one who was a stranger to their manners and customs, appear to require cordials and tonics. But fatal consequences would result from this practice, and the disease would generally gain ground; while the patient would recover more certainly under an opposite method of cure. In the latter stages of febrile diseases, however, when the powers of life are considerably exhausted, the use of tonic and warm cordials becomes indispensable; but great nicety

of discrimination is requisite to determine when the former mode of treatment should be laid aside, and the latter adopted. The abdominal viscera, especially the alimentary canal, are chiefly liable to disease amongst the natives of India: relief, therefore, of these organs is the first consideration; and, if taken early, attacks of fever or disease in these viscera may be removed, nine times out of ten, in a few hours. An emetic we have always found beneficial, and particularly so when it acted upon the bowels as well as the stomach. We have known this to cure a severe attack of fever in twenty-four hours; but sometimes other aids are required to remove urgent symptoms, as the local application of leeches to the temples or in the neighbourhood of the liver, and the further aid of calomel and such purgatives as will remove feculent matter from the bowels, without exhausting the powers of the system by producing copious watery motions merely. It is the copious discharge of watery stools that often proves suddenly fatal to natives; and, therefore, such medicines as are likely to produce this effect are manifestly wrong. There are many occasions in fever in which general bleeding may be used with advantage amongst natives, and the belief that it should never be practised among them is an error; but with them, as well as Europeans, it requires to be employed when vascular excitement has but recently commenced, or has not continued long, and before exhaustion has supervened; and it, more than any other remedy, demands both tact and discrimination on the part of the practitioner.

To support the powers of life in the natives, by means of tonics and cordials, must always be a great object; but while this is strictly attended to, evacuation of the alimentary canal should never be lost sight of. Accumulations of morbid matter in the large bowel, occasioned, perhaps, by a want of power in the system to relieve itself, must always be guarded against, because it keeps up that excitement, and very often occasions that watery discharge, which so soon exhausts the patient, and which is often mistaken for the disease itself, although the effects merely of fæcal accumulation and irritation. If watery motions continue without fæces, we have reason to believe they proceed from morbid and acrid matter requiring to be removed, and then they are, perhaps, an effort of nature to relieve herself from this

matter. The nicety, therefore, of discrimination in these cases can only be acquired by close and unremitting attention at the bed-side of the patient, and an entire abstraction from all prejudiced and preconceived notions.

Cold upon the natives produces shrivelled, dry, and unperspiring skin, which soon becomes scaly, and sometimes large fissures form on the feet and hands, producing a disease peculiar to natives inhabiting swampy and moist countries. With these complaints the body always wastes, and sometimes diarrhoea supervenes. The tongue is generally, also, white and moist; sometimes white and dry; and sometimes it presents a clamminess along the edges, and a black tinge on the surface, as if ink had been spread on it. The dry white tongue generally indicates the propriety of bleeding; and the moist, white, clammy, or black state of the tongue always requires purging, but the evacuations should not be watery; consequently, salts are not the remedies which ought to be employed. The purgatives employed in these cases, and indeed for natives generally, ought to be always warm and stomachic. Tonics and laxatives, with alteratives, blue-pill, aloes, myrrh, rhubarb, &c., combined with ginger, will always be serviceable; yet in no instance should purgatives be given to act violently, but be employed so as to operate gently and regularly. More good is to be expected from the regularity of their operation than from their copiousness; because too copious discharges in these cases would exhaust, while moderately full and regular evacuations would strengthen the alimentary canal and the system generally.

In the intermittent and remittent types of fever occurring amongst the natives of India, we must trust chiefly to the exhibition of bark or the sulphate of quinine, given during the intervals or remissions of the disease, and always in combination with cordials and warm spices. But we should at the same time attend to the state of the bowels and of the alvine secretions. A dose of calomel may be given at first at bed-time, and followed in the morning with warm stomachic purgatives, as already recommended; and the bowels should be regularly and copiously evacuated by means of the latter remedies during the exhibition of the bark, and as long as disorder remains.

In the continued type of fever, as it occurs in this class of persons, the employment of emetics and cathartics, especially during its first stage, is always of remarkable benefit. But, in order to be serviceable, these medicines should be prescribed early, generally in the first twenty-four hours of the illness, and before the acute stage, or that of excitement, is followed by exhaustion. The medicine which we have found the most beneficial in the commencement of continued fever, as it is observed in the natives, is six grains of the emetic tartar dissolved in a quart of water. A glassful of this solution is prescribed every five or ten minutes until full vomiting is produced, and afterwards the same dose is repeated every two or three hours. Given in this way, a full evacuation of the contents of the stomach is procured, and subsequently very copious discharges from the bowels are produced. The dose of the solution is now exhibited every five or six hours only when it acts very decidedly upon the skin, occasioning a very copious perspiration. By these means all excitement is overcome, and the pulse and heat of skin brought down to the natural standard. After this is obtained, a gentle but regular action should be kept up in the bowels and secreting viscera, by means of warm stomachic purgatives and enemata, until the disease disappears.

When the fever assumes, as it frequently does when neglected in its first stages, either a typhoid or adynamic form, we must then have recourse to the employment of wine, cordials, tonics, and warm stomachics, and either alternate them with warm and cordial purgatives, or combine the one class of remedies with the others, according to the particular circumstances of individual cases. Bark, with ammonia, opium, hot spices, &c., is here requisite, and all the other means already mentioned when the adynamic and malignant forms of remittent and continued fevers occurring amongst Europeans were treated of.

If determinations to particular organs, or local inflammations, supervene in the progress of fevers in the native constitution, we must then, in addition to the use of purgatives, resort to local depletions: and if any internal viscus become congested, enlarged, or obstructed, similar measures must be adopted.

Enlargements and obstructions in some of the abdominal viscera are very frequently observed to occur in those cases of fever which have been neglected or improperly treated at their commencement, or in those where the stage of excitement has been allowed to proceed and produce its usual effects. Enlargements of the spleen, tumours of the pancreas, enlargement of the mesenteric glands, and chronic lesions of the liver, are the most frequent effects thereby produced.

In all cases where these consequences have supervened, purgatives combined with cordials, and tonics, so as to impart energy to the digestive and assimilating functions, and keep up a constant but moderate influence upon the secreting viscera and bowels, are indispensably requisite. In some of the more robust and better fed, we may premise local depletions with advantage; but this, as well as all other measures, must depend upon the particular features of individual cases.

In the more northerly and higher provinces of India, affections of the chest, such as pneumonia, pleuritis, or bronchitis, are not infrequent complications with fever amongst the natives, especially during the rainy and cold seasons. In cases of this kind, regular warmth, with the exhibition of diaphoretics, local or general depletions, according to the nature of the case, the use of blisters, and of the gum ammoniacal mixture, with camphor, hyoscyamus, conium, spiritus ætheris nitrici, and antimonials, are requisite. The bowels should also be evacuated regularly; and at the commencement of the disease an emetic may be exhibited.

If dysentery supervene in the course of fever amongst the natives, as it frequently does during the cold and rainy seasons, especially in low, damp, and swampy situations, after removing all morbid secretions and fæcal accumulations, a blister should be placed over the abdomen, Dover's powder, with calomel or blue-pill, should be given from time to time, and injections of the infusion of ipecacuanha, with warm cordials, thrown up. A flannel bandage should be wrapped round the loins and abdomen, and the patient's diet duly regulated. In the more robust, local depletions, followed by hot

fomentations or poultices, may precede the foregoing measures, especially upon the first supervention of the bowel disease. When the acute symptoms have been removed by these means, we may then resort to the use of tonics combined with antacids, cordial stomachics, and warm diaphoretics: and medicines of the same kind may be employed in the form of enemata.

During the management of disease amongst the natives, care should be taken to keep them dry and warm, to avoid as much as possible all vicissitudes of temperature, and to support their strength by light nourishment. They are extremely sensible of kindness and attention to their ailments, and both should be paid them, particularly as tending to give them confidence in their medical attendant, and to secure the success of the means used for their recovery.

CHAPTER III.

OF THE MANAGEMENT OF CONVALESCENCE FROM FEVER AND DYSENTERY, AND
OF CHANGE FROM A HOT TO A TEMPERATE CLIMATE, EITHER DURING OR
AFTER RECOVERY.

DURING the earlier periods of convalescence, the utmost attention should be paid to the diet and regimen of patients who have been labouring under either dysentery or fever. The food at first should be chiefly farinaceous, in small quantity, and repeated somewhat often. Care should be taken never to load the stomach; for, in the majority of cases, the mucous surface of this viscus, as well as that of the bowels, is in a very sensible and irritable condition, and liable to be thrown into a state of inflammation, inducing thereby a relapse, by whatever may excite it too strongly.

Many of the relapses which follow either febrile or dysenteric attacks depend as much upon errors in diet and regimen as upon the influence of the exhalations from the soil, and vicissitudes of temperature or of weather. After the patient has been for some time supported by farinaceous articles of diet, with the addition of a little wine, when the energies of the system require such support, the lighter and less heating kinds of meat diet may be given, at first in small quantity, and its effects carefully observed. If it heat the system or accelerate the pulse, its quantity must either be diminished, or it should be entirely omitted. The animal food which may be first tried is that least likely to heat the system, and the readiest digested. The flesh of chickens, young fowls, and of young animals generally, is to be preferred; and soup only in small quantity indulged in, for reasons already alluded to when treating in the First Volume on the management of disorders of the digestive organs.

When the failing energies of the system absolutely require the supporting influence of vinous liquors, they may then be taken in small quantity; but if there exist any suspicion in the mind of the practitioner of organic disease still lurking about the system, they should never be ventured upon. They are beneficial chiefly when employed to excite the exhausted energies of the frame, when exhaustion has supervened as a consequence merely of over-excitement, and when it is quite unaccompanied with congestion or lesion of any particular organ. The lightest kinds, as hock, Sauterne, Burgundy, and the Rhenish wines, should be first tried, and afterwards the clarets, or whatever sorts may be preferred.

If we find any acceleration of pulse or heat of skin follow either the food or wine indulged in, we should immediately resort to purgatives and a stricter antiphlogistic diet. Relapses both in fevers and in dysenteries are chiefly occasioned by a too liberal indulgence of the returning appetite, together with want of a sufficient attention to the state of the bowels, and to the use of purgatives or laxatives, as circumstances require. Undue exposure, also, either to the sun, or to the night-air and dews, or a too sudden return to the habits and regimen usually followed by the patient in health, frequently occasions relapses. But one of the frequent causes of such occurrences, especially when acting conjointly with those now enumerated, is the continued operation of the exciting causes of fever and dysentery, namely, exhalations from the soil, during the progress of recovery.

This cause should be especially guarded against, both during the continuance of disease and the commencement of recovery, and the patient, if possible, removed beyond its reach, to more salubrious situations. When the distance to a more healthy situation is short, patients should be taken thither immediately upon their being taken ill: if the place be too far for immediate removal, they should be taken to it as soon as their state admits of the change; for it is often surprising to see the great rapidity of recovery in a salubrious situation, compared with what is always observed in localities abounding with the sources of disease, or in which disease is endemic. During our practice in India we have had numerous instances of these facts brought to

our notice. Thus, in Java, during the expedition to that place in 1811, when in charge of the chief hospital at Weltivreedon, we remarked the very great malignancy and mortality of fever and dysentery in the hospitals of Batavia, and the entrenched camp at Cornelis, and the long duration and difficulty of recovery: whilst deaths were much fewer, and convalescence much more rapid, in the more elevated and better ventilated hospital at Weltivreedon, which was but at a short distance from these very pestilential situations. In them disease of every kind, owing to the continued operation of a most noxious atmosphere, was rendered more malignant; and all disorders, whether external or internal, were stamped with the same general character. In the higher and more healthy positions to which the sick were afterwards taken, disease ran its course, in various forms, according to the circumstances of individual cases, assumed a more manageable character, and was followed by a more rapid and perfect recovery. But in other situations, as where the troops cannot be taken to a healthy situation, immediately upon being seized by disease, the period of convalescence must be waited for, when great advantage will generally be obtained by removing them to healthy localities until they are perfectly restored. The removal of troops during convalescence from Seringapatam to Bangalore, and the great advantages accruing from this measure, as was practised by Dr. Boswell, the superintending surgeon of Mysore, is a good illustration of this precept, which is one that should never be neglected by the medical officer or practitioner, and ought always to be brought to the notice of the commanding officers or other authorities.

The advantages thus resulting from carrying men at first when taken ill, or as early as convalescence will admit, to salubrious situations, for the purpose of medical treatment, and removal from the powerful causes of disease to which the neglect of such a measure might expose them, are evident not only in the occurrence of a milder or less dangerous form of disease, and a more rapid convalescence, but also in the preventing of those local congestions and fatal obstructions of internal viscera from supervening, which ultimately either prove fatal or oblige those affected by them to leave the country.

Having thus insisted upon the propriety of taking the sick at once to hospitals or other accommodations placed beyond the sphere of operation of those causes which occasioned the disease, and particularly without the influence of the endemic source of mischief; and, if this be not practicable, of removing them, when convalescent, to such situations, observing at the same time all due precaution, both during the removal and after it has been made,—we shall now offer a few remarks upon the propriety of attending attentively to the state of the functions of the digestive organs, to the diet, the regimen, and the dress, for a considerable time after convalescence from fevers and dysentery, and especially when the patient is returning from India to Europe.

Attention to the actions of the stomach is important: they may be promoted by gentle tonics; but the use of these medicines should also be combined with laxatives, as the employment of the former merely, during recovery from febrile diseases, is always productive of constipation; and the functions of the bowels, as well as those of the stomach generally, require assistance for some time after all other derangements are removed. In those cases, where any of the abdominal viscera have suffered considerably during the dysenteric or febrile disorder,—and these are very numerous,—the combined operation of gentle laxatives and deobstruents with tonics is extremely necessary. Where the colon, liver, or spleen, have experienced any organic lesion, which is frequently the case, and where we have reason to believe that enlargements, obstructions, or other similar derangements, still remain, the use of purgatives and laxatives, with gentle tonics, change of air, and other internal and external remedies, and measures which we have in various places insisted upon as being requisite in chronic diseases of the organs employed in the functions of digestion and assimilation, should be put in practice.

These means, with a strict attention to clothing, should be also resorted to when the patient finds it necessary to remove from India, or any other intertropical country, to Europe. During the voyage homewards, invalids

generally find it a matter of great difficulty to keep the bowels sufficiently open; and many have their complaints aggravated by want of attention to the functions of these viscera. Accumulations not infrequently thus form in the large bowels, and occasion irritation; and if the patient have been suffering from dysenteric disease, a return of his disorder is not an unusual consequence. In other cases, where the liver has been much affected, either from previous disease or during fevers or dysentery, an attack of hepatitis may be induced by the want of due attention to the state of the bowels, conjoined with the influence of a colder atmosphere than that to which the patient had been for some time accustomed.

Attention to warm clothing, when returning to a cold climate, has been already insisted upon by us, when the disorders of the liver and stomach were under consideration. But although requisite in these, it is still more so in derangements of the bowels, and especially when the patient is returning to Europe, in order to restore his health, after attacks of dysentery or fever. He should never dispense with flannel next his skin, on any occasion, and should be particularly careful always to preserve his feet warm, and resort to such other additional clothing as his sensations and the varying state of the seasons in Europe require. When he has returned to England, he should be still more careful both to preserve an open state of his bowels, and to keep the surface of the body and extremities comfortably warm.

When the patient has it in his power to select the period of return to this country, some attention may be paid to it. If he arrive early in the spring, he is liable to feel the effects of a very variable season for some time. If he returns in winter, the sudden transition from a warm climate to a cold one may be detrimental to the system, especially after it has become assimilated, by a long residence, to a warm country. In our opinion, the best time of arriving in England is in the months of June, July, August, and September. If the invalid find the cold too severe during the winter months in some of the more easterly counties or in the metropolis, he may try the climate of Bath, and make use of the waters, which may be of service to him.

He should, at all times, be attentive to the first symptoms of disorder, especially of his bowels, and immediately resort to medical aid. He should also never neglect the slightest cold; for persons who have resided for any considerable time in a warm climate, especially in India, are liable to pulmonary affections, and inflammatory attacks implicating both the liver and lungs, upon their arrival in Europe. Those who have suffered much from ague should also be cautious of exposing themselves to its causes when they arrive in this country; for a liability to attacks of this form of fever often continues through the greatest part of life, especially if the patient be subjected to their exciting causes in a state of predisposition to their invasion. In other respects, the invalid who is returning to Europe after attacks of dysentery or fever, should adhere to the injunctions insisted upon in the First Volume,* and there urged in respect of change of climate after diseases of the stomach and liver.

* See the sections at pp. 288 and 683 of the First Volume.

CONCLUDING CHAPTER.

OF THE MANAGEMENT OF EUROPEAN TROOPS UPON THEIR ARRIVAL IN INDIA,
AND DURING THEIR STAY IN THAT COUNTRY, WITH A VIEW OF MITIGATING
THE PREVALENCE OF DISEASE AMONGST THEM.

THE occurrence of disease amongst Europeans, upon their arrival in a country so different as the various provinces of India are from the one in which they have been born and reared, must be viewed as being, in a great measure, a necessary consequence of the change. The native of Europe, especially of its more northerly kingdoms, experiences a great increase of temperature beyond what he has been accustomed to; and he breathes an atmosphere loaded with more moisture and exhalations from the soil. The consequence of these circumstances alone is, usually, attacks of disease, generally of fever, after which his system becomes more assimilated to the climate, and, with due precaution, less liable to suffer from it.

Although intertropical climates may thus prove uncongenial to the European constitution, and produce disease in many instances, yet we are of opinion that much depends also on the change of habit and diet during a voyage to India, and imprudences committed by the soldiers themselves after their arrival there.

Our experience has been chiefly in the Madras Presidency; but we have reason to believe, that whatever influences the health of soldiers at one presidency, is in operation in all the others; and, therefore, the remarks which we shall have occasion to make may be considered general in respect of India.

From the medical returns already given in the First Volume, and according to the comparative Table given at p. xix. of the Appendix to this Volume, it

will appear that the casualties amongst European troops are greater at Madras than in Bengal, though the per-centage of sickness is greater in the latter than in the former presidency. This is an important fact, and deserving of consideration. But the want of precise information puts it out of our power to explain this matter satisfactorily. It is, however, said, that much more attention is paid to the comfort of European soldiers generally in Bengal than at Madras or Bombay. Whether this be the fact or not, must be known to those who are acquainted with the local arrangements of the different presidencies: for ourselves, we do not presume to hazard an opinion upon that of which we are but imperfectly informed, further than to wish that attention were drawn to the subject; we may, however, safely say, that if the casualties in Bengal be less frequent in consequence of better arrangements and greater comforts to the soldiers, it follows, as matter of course, that similar measures should be adopted at the other presidencies.*

The landing of European troops in India, and their treatment after arriving in that country, are matters of so much importance as regards health, that we shall make a few observations arising out of what has fallen under our own personal observation, trusting that what we shall here advance may lead to the adoption of measures calculated to benefit the public service and to save human life.

* The following extract of a letter from the Madras Medical Board to the Government of Fort St. George, dated 29th November, 1824, seems to bear so much upon this subject, that it deserves attention:—

“ It will be observed that in the inspection report of the superintending surgeon, almost all that relates to the fatigue, exposure, accommodation, and diet of the European troops at Rangoon, is intentionally omitted. We cannot but extremely regret this omission, as it leaves us much in the dark respecting these main causes of the evils which are portrayed in the heavy sick reports.

“ We are not aware that the Bengal contingents have fared better in these respects than the Madras troops, although private accounts are said to state this to be the case. Neither are we aware of the degree of sickness which has prevailed in the Bengal contingent since reaching Rangoon; but we have been favoured with a present state of the force, dated 3d of October, by which it appears that the sickness and mortality have been fully as great amongst the Bengal as the Madras troops, at least during the month of September. *The Bengal and Bombay Artillery present,*

It may, however, be necessary, in the first place, to say a few words upon the habits of the soldier before he leaves England, and the system usually adopted on his passage to India.

In England, soldiers have good beds, whether they be in barracks or in quarters. Their food is generally plain, and good of its kind; and they have the advantage of malt liquor instead of spirits. When they embark for India, they have salted provisions, with flour and peas; and they are allowed half-a-pint of rum daily, which is drank at the time either in a diluted or undiluted state, according to the directions of the commanding officer; and they have always during their passage the comfort of a good bed and hammock.

however, a marked contrast to the Madras Artillery; and it would be extremely interesting to be informed of the relative circumstances of these parties."

Present State of the Rangoon Army, 3d October, 1824.

CORPS.	Effective Strength.	Fit for Duty.	Sick.	Died in September.	Proportion of Sick.	Prop. of Deaths.
Artillery, Bengal.....	181	153	28	5	15½	2¾
Ditto, Madras	193	110	83	17	43	8¾
Ditto, Bombay	65	57	8	2	2	3
His Majesty's 13th Regiment.....	647	399	248	50	38½	7¾
Ditto 38th Regiment.....	868	659	209	45	24	5
Ditto 41st Regiment	644	431	213	43	33	6¾
Ditto 89th Regiment	776	663	113	66	14½	8½
Madras European Regiment.....	707	541	166	65	23½	9

N. B. As the returns for September have not been received, and the series of weekly statements are incomplete, it is difficult to determine accurately the precise progressive mortality amongst the European troops. It appears, however, nearly as follows:—

April	4
May	17
June	32
July.....	68
August.....	124
September.....	191 = 436

The troops are generally made to keep watch whilst on the passage to India; and they are divided for this purpose into three divisions, so that one-third are necessarily upon deck. This gives more room to the men that are not on duty. But when they get into warm weather, they prefer being upon deck both day and night. This, however, is generally prohibited; yet, from the heat and closeness of the decks below, they come up at night exceedingly heated, and expose themselves to the damp, cold night-air; thus creating a pre-disposition to disease in the system, and frequently serious derangement, although it may not always shew itself at the time, or till after landing in India, where a more efficient cause produces a rapid development of that disorder which probably commenced upon the passage.

Soldiers and recruits, on their first arrival in India, invariably expose themselves to the sun during the hottest part of the day; they eat all kinds of ripe and unripe fruit, and every trash procured for little or nothing in every bazar in India. They are very fond of bathing in the ditch of the fort, or in any tank or dirty stream they come near; a circumstance which we consider productive of disease in many who do not drink the pernicious liquors of the country; for although bathing, when properly regulated, is useful in keeping them clean, yet upon their arrival, and in a state of lurking disease and morbid excitability, which is generally the case during the first few months after they have arrived in India, alternate exposure to the sun and bathing must prove hurtful.

The soldier lands with what is called his *kit* only; his bed and hammock are left on board ship, and generally his blanket. His great-coat is taken from him and put into store; and when he arrives at his barrack, there is a wooden cot and bamboo mat provided for him, but neither bedding nor covering of any kind beyond the clothes he wears.

It must, therefore, be self-evident, that sleeping upon a hard wooden bed after fatigue or exhaustion, from whatever cause it may arise, is not calculated to restore the weakened and exhausted powers of life, but rather to distress, and unfit the soldier for his duties.

The want of comfortable bedding and clothing, which the soldier experiences on his arrival in India, is one of the points to which we wish to draw particular attention, being quite convinced that it is productive of great injury to his health, if not of death in many instances.

The very erroneous notion, that beds and bed-clothing are not required in warm climates, is one pregnant with mischief to the constitution of soldiers.* There is no country in the world, perhaps, where there are greater vicissitudes of climate than in India. In the Mysore country, the thermometer ranges from 50° to 90°, and sometimes higher, in the course of the day; in the Carnatic, from 70° to 100°, and upwards; and in the ceded districts and Hyderabad similar variations take place. These are stations for European troops; and when we consider that a young soldier or recruit, — landing in India with the seeds of disease within him, and its exciting causes constantly operating upon him, — enters upon a new existence, with every thing strange around him, — lays himself, heated and fatigued from duty or other causes, upon a teak board, without bed or covering of any kind save his jacket, — stewed, as it were, by the heat of the barracks in the early part of the night,† and awoke between four and five o'clock by the cold, chilling winds of the morning, at which period men are usually taken sick; — it cannot, we conceive, be a matter of surprise that so many men should be attacked with disease: indeed, the above circumstances alone will, in some measure, account for the great loss sustained by regiments on their first arrival in India. If attention to this subject were made a special duty of non-commissioned officers experienced in the climate, we are persuaded that many valuable lives might be saved to the service and the country.

It is a great mistake to think that the requisites to comfort are not necessary in warm climates; for observation will teach the medical practitioner, and even acquaint the soldier himself, that exemption from disease

* In confirmation of our remarks on the want of the requisite clothing for soldiers in India, see the APPENDIX, No. II. pp. xxxviii and xl.

† The men very often, when heated in the barracks, take their mat and sleep outside on the ground, exposed to all the influence of malaria, cold air, and dews.

is commensurate with due attention to clothing, according to the season and vicissitudes of weather. The absurd notion that some persons, on their first arrival in India, entertain respecting the practice of *roughing* as it is called, in order to make men hardy, is also productive of mischief, and therefore deserving attention. We have often had cause to believe, that the first men to become sick, on their arrival in India, are those who, either from want of the above necessities, or from carelessness and pretended over-hardihood, are the most exposed to the vicissitudes of climate. Every good soldier has a desire to become hardy; it is a feeling that deserves encouragement; at the same time, attention should be paid to the physical powers of individuals, that an over-zeal or devotion to the service should not expose unnecessarily valuable lives, and that an affectation of being more hardy than nature made them be not indulged in. Weakly men, properly taken care of, may be useful, and would do their duty well when their services are called for, who, upon the *roughing* system, might fall an early sacrifice: in a word, we conceive that the efficiency of men will depend very much upon the care that is taken of them, not only on their first arrival, but during their residence, in India; and this every experienced soldier who has served in that country will, we feel confident, admit.

The diet furnished to the Indian soldier, namely, curries, spiced stews, &c., is so very different to that which the young soldier has been accustomed to, that we have known men live upon *bread and arrack* for a considerable time before they could reconcile themselves to the Indian diet. This is a fact that does not always come to notice; but it is no less true, and deserving of attention in order that the diet, under such circumstances, may be regulated to the soldier's palate on his first arrival.*

We shall suppose a soldier, under the circumstances stated, loathing his hot-spiced curries and stews, drinking spirits which he is not accustomed to—perhaps indulging in the more seductive intoxicating and deleterious

* The following is the mode of victualling recruits on their arrival in India:—Breakfast—happens (a kind of crumpit), with butter, tea, or coffee. Dinner—either curry of mutton, fowl, stews, and bread. Supper—the same as breakfast. This is the regulation of the service.

beverages that are made in all bazars and sold at a very moderate rate, retiring to rest, heated and fatigued, upon a wooden cot without either bed or covering; disturbed and restless by the heat and closeness of the night and musquitos; awoke between three and four o'clock in the morning by the cold chilling winds, and taken to drill about six. When all these circumstances are considered, the wonder is, not that men die, but that so many survive such exciting causes to disease. That many do escape is true, but that others are lost is equally certain; and this must be the case till the system is altered, and until experience teaches both the soldier and the officer the absolute necessity of strict attention to their comforts when they first arrive, and until they become accustomed to the climate and enabled to take care of themselves.

Soldiers generally arrive in India between the months of May and August, of all others the most unfavourable period for landing troops, — May, June, and July being the hottest months at Madras, and the rainy season in Bengal and Bombay.

With regard to the age best suited to meet the vicissitudes of inter-tropical climates, we presume there can be but one opinion amongst those competent to judge, namely, that the soldier should be master of all his powers, and in the full strength and vigour of life. No weakly or sickly recruit should ever be sent to India; they are unable, from the first, to perform their common duties, or to bear the fatigue of their drills; they acquire all the vices of a barrack — become *malingerers*, useless, troublesome, and dissipated, setting bad examples to better men, who are not infrequently misled by such characters; and they often destroy the efficiency of a corps.

Every soldier or recruit who goes to India should be master of all his exercises, and perfect in his duties, so as to render his exercise, on his first arrival, rather salutary, than fatiguing as it now is, and until he becomes more accustomed to the habits of an Indian life. Drills absolutely necessary to make the young recruit a soldier, would, we conceive, be much better

practised in England. This is a measure which would, doubtless, save the lives of many who fall sacrifices to the present system of excessive drilling in India, before they can be properly qualified for their duty.

That very improper and unfit persons are sent out as recruits, of all ages, from sixteen to thirty or forty, and that very heavy loss is sustained by the government of India on this account, cannot, we think, be questioned; but this is not a subject for us to discuss here, though we have remarked, at page 351 of our *Sketches of the Diseases of India*, upon the loss to Government by the number of men discharged annually as unfit for the service. Our present object is to point out what appears essential to the efficiency of the army, the better condition of the soldier, the preservation of human life, and, in consequence, a saving of public expense to Government, leaving to others, better qualified than we may be, to judge of the age and constitution of men best suited for the public service of the country.

Many regiments, on their first arrival in India, suffer from excessive drilling in the heat of the morning: they are generally out between five and six o'clock, and return between seven and eight. The sun, at this time of the day, is often exceedingly oppressive, and consequently men often fall down in the ranks, and are taken to the hospital. We conceive that no regiment in the Carnatic should be out after half-past six or seven o'clock, at the furthest, and that heavy drills might probably be more safely performed in the evening; but this is a point upon which we will not dwell, beyond stating what we consider to be right upon general principles, which must be modified according to circumstances. For instance, in the Carnatic, which is very hot, early hours would be advisable; while in Mysore, Hydrabad, and the Ceded Districts, where there are heavy fogs and dews, that are not dissipated before nine or ten o'clock, and perhaps later, — troops should not be taken out till a more advanced period of the day. We merely wish to draw attention to the general principle, in order that either excess should be avoided; and the modifications will, as a matter of course, depend upon the commanding officers.

We consider the morning marches, for exercise, that are made by regiments, extremely useful, as they enliven the soldier, without producing exhaustion. In respect of the marching of regiments or detachments, it is necessary that we offer some observations. The object is to proceed sufficiently early in the morning to get them under cover before the sun becomes oppressive. Night marches, if possible, should always be avoided, chiefly on account of their depriving the soldier of his rest; for repose cannot always be procured in the heat of the day, after fatigue. If a little warm tea or conghee were given to the soldier before he sets out, he would be enabled to go through his march with infinitely more comfort, and rendered better able to perform his duties after his arrival at the ground. We have known this rule observed in many regiments, and have often witnessed its unequivocal advantages.

The distance of the daily march is also a matter deserving attention. The regulations of the service limit the march of troops, on common occasions, to an average rate of nine miles a day; but circumstances render it impossible that this regulation can always be attended to, and it is not unusual that the marches are from fourteen to seventeen, and sometimes eighteen miles. Such excessive marches are always distressing to troops, and should never be insisted upon, when they can possibly be avoided, as we are persuaded that the health of men is often impaired by them.

The want of water is one cause of long marches, and this cannot well be avoided in particular seasons of the year; but long marches are sometimes made from imperfect information of the country through which troops are occasionally obliged to pass; and as officers in command cannot well deviate from the orders they receive, it would, in our judgment, add to the comfort and welfare of the soldier, and in no way impede the public service, if a discretionary power was given to commanding officers to divide these long marches into two, where it can be done without compromising the good of the service, thereby making the distance eight or ten miles, in place of seventeen or eighteen. This would very much add to the convenience of the soldier, and render the cattle more efficient,—a subject of much importance in marching troops in India. They would thus be enabled to

proceed at the rate of eight or ten miles a day with fewer halts, and arrive at the end of the march perfectly fresh and fit for any exertion.

These observations apply to regiments marching from one station to another ; and as it sometimes happens that, after a very long march of some hundred miles, regiments are called into more active operations, it would be desirable to preserve both men and cattle in a state to meet such exigencies. But this is a subject that does not come within the scope of our duties. It is, nevertheless, deserving the attention of those who direct these matters.

That officers, cadets, and civilians, do not suffer from disease in the same degree as soldiers, is an undeniable fact, though, from age and other causes, we might suppose them to be equally liable to the influence of climate. This partial exemption from disease we conceive to arise exclusively from their being better fed, not given to intoxication, less exposed, and more comfortably lodged. If this opinion be correct, and the health of this class of the community be preserved from these causes, it shews the necessity of similar attention being paid to the soldiery, not only as regards the efficiency of the service, but also for the cause of humanity.

We would suggest, therefore, as soldiers, on their first arrival in India, are unable to provide themselves with the conveniences and comforts necessary for the preservation of health, that an establishment should be formed at some convenient and healthy station near the Presidency, capable of holding 1000 men, where every arrangement essential to their comfort and convenience should be made ; and that, on landing, they should be immediately marched to this depôt, where they would be preserved from all excitements, dissipation, and other irregularities they are now exposed to, and which prove so destructive, until they became accustomed to the country, and possess the means of providing themselves with the conveniences necessary to their comforts in barracks, like old soldiers, all of whom have comfortable beds in quarters.

Measures of this kind would, doubtless, save many lives ; for the great loss is generally during the first few months after their arrival in India.

Regiments that have been a sufficient time in the country to establish regular habits, do not suffer at all in the same proportion ; and this can only arise from a better knowledge of the manner, on the part of the men, of taking care of themselves than they possessed when they arrived in the country.

The following facts will prove the correctness of these positions : — His Majesty's 13th dragoons arrived at Madras in June 1819, 759 men strong, and lost, in the first few months, 45 men. In the following year, 1820, they lost 46 men ; in 1821, 29 men ; in 1822, 23 men ; and in the following six months of 1823, they lost 13 men, although the strength of the regiment had been increased by draughts. — His Majesty's 54th regiment arrived in May 1822, 663 men strong. Lost, in the first month, 43 ; in the second, 20 ; in the third, 5 ; and in the succeeding six months, 26 men, their effective strength being increased by draughts to 940 men. — His Majesty's 41st regiment arrived at Madras in July 1822, 706 strong, and lost 32 men in the first month ; in the second, 13 ; in the third, 11 ; in the fourth, 8 ; in the fifth, 3 ; in the sixth, 5 ; and in the following six months, 34, the effective strength being then increased to 777.

It appears to us, therefore, that the cause of the mortality amongst soldiers soon after their arrival must be partly ascribed to the privations they suffer, and to the circumstances in which they are placed, which are so very different from those which either officers or civilians are liable to.

If we consider the revolution that takes place in the habits of the soldier on embarkation in England and during his voyage out, and again, the sudden change into a hot and unhealthy climate, with every thing strange around him, the want of comfortable bedding, the unusual diet, exposure to sun, fatiguing drills, eating ripe and unripe fruits, indulging in all kinds of trash, intoxicating beverages, &c. which are found in all bazars, and procured for little or nothing, and in which the men, especially the recruits, partake largely, — we need not feel surprise at the number of men who die when regiments first arrive in India ; for such must necessarily be the case till some better arrangements are made than now exist.

Mr. Boswell, an able and experienced medical officer, late member of the Madras Medical Board, addressed a letter to Lord William Bentinck upon the subject of establishing a depôt for soldiers arriving in India, so far back as 1804. The letter is so fully explanatory of the importance of the measure, and the manner of conducting it, that we have, with his permission, made use of it. (See Appendix, No. IV.)

A similar establishment to that now recommended was made in Bengal in May 1826. We have been favoured with Dr. Burke's report upon this institution, by the kindness of Sir James M'Grigor, and have given an extract from it in the same Appendix.

We are fully aware that, in establishing these depôts, a heavy expense to Government must necessarily follow; but the valuable lives that may be saved by the measure, if properly regulated and judiciously conducted, will, assuredly, more than compensate for the expense, as it will not be doubted that a very heavy cost is at present involved in the loss of so many men immediately upon their arrival in India.

We have always considered, from no small experience of these matters, that the efficiency of an army in India depends very much upon the care that is taken of soldiers in quarters. We have observed, that where great exertions were to be made, those men to whose comforts great attention had been paid, were always better able to meet difficulties and hardships, and more to be depended upon in the hour of trial, than those otherwise circumstanced. The best part of our life has been passed on field-service with the Indian army; and, from personal observation of these facts, which have often come practically to our notice, we speak with confidence, in the hope of drawing attention to that which is only partially, or at least but *locally*, known.

The Court of Directors of the East India Company have always shewn the most liberal consideration to the happiness, comfort, and well-doing of all their establishments in India, and the local governments have ever been alive to the welfare and complete efficiency of the public service, as has been

manifested upon every occasion where great exertions were necessary to be made. There is no public service in the world more efficiently and more liberally supplied with every requisite than that of the East India Company ; and whenever want or deficiencies of any kind are found in any of the great and essential departments of supply, whether of provisions, stores, or *medicine*, we have no hesitation in saying that the cause is local, and depends exclusively upon the controlling and executive officers in charge of those important branches. This fact is well deserving the attention of the Governments in India, because the public service is sometimes impeded by these causes, which are not always brought to notice, and consequently do not often come under their observation.

In regiments that have been long established and seasoned in India, we have often had occasion to believe, that in many instances sickness depends more upon themselves than the climate, and is generally most prevalent amongst that class of men who indulge in every excess wherever opportunities offer. Every pay-day fills the hospital ; money received after a voyage, or after leaving an hospital, is invariably followed by hard drinking. The first landing in a new country, or arriving at a new station, is also productive of irregularities, and, consequently, of great sickness. These are occurrences that cannot, perhaps, always be avoided. We know, from experience, that commanding officers in general take every possible care of their men ; and the standing orders of every regiment exhibit the best possible rules for preserving health. Notwithstanding all this, we have reason to believe that much of the sickness in regiments depends upon irregularities in barracks, and in some instances may be ascribed to the diet. Why should a soldier be obliged to eat hot-spiced curries and stews if he does not like them ? We know that all men do not like this diet on their arrival in India, and that they often forego their dinner in consequence. We have never, we must confess, seen any good reason why the dinners should not be dressed in a way suited to the wishes of the soldiers, except that it is not the custom ; and if this be the only cause, it surely may be overcome. We sometimes find that regiments at the same station have much less sickness than others ; and from what cause does this arise, if it be not owing to a better system

of victualling, and improved interior regimental arrangements? We were once in garrison with two regiments, both of whom suffered considerably after their arrival in India, and lost a great many men; but after they had been some time in the country, and accustomed to the climate, the healthiness of one compared with the other was striking, although at the same station, and, to all appearance, under precisely similar circumstances. The inquiries which we made, as to the cause of this difference, led to the belief that it arose from a better system of interior economy.

In the dieting of soldiers, attention is paid alone to the dinner; breakfast and supper are entirely overlooked. If there is any of the dinner mess left, it is used for supper; and for breakfast, either fried meat, or what is called tea and coffee. Burnt wheat, to look black like coffee, is what is sometimes taken; and old tea-leaves, which have been used and dried again by the sutlers, is sold, and used by the soldiers.*

Fried pork is not an infrequent breakfast, killed, perhaps, only an hour before it is dressed. This has always been considered unwholesome; and in many regiments its use is not permitted more than twice a week.

Men who have families fare better. They have their food dressed simply, roast and boiled, and, when sober and orderly, they are comparatively very healthy: but even with them breakfast is a secondary consideration; and as this meal does not come under the cognizance of the officer, it is arranged, of course, as they please. We have often traced sickness in men, who have come into hospital, to this meal.

For the dinner-mess, the meat is examined by the quarter-master and officer of the day; and, if approved, is divided into the different messes, and dressed in the form of curries, stews, or soups, according to the wish of each

* We do not intend to say that this is always the case, nor that it is the custom in all regiments, but we know it does sometimes exist; and we are desirous of drawing attention to it, in the hope of preventing it entirely.

mess. When the dinner is reported ready, it is again inspected by the officer of the day, and reported to the commanding officer of the regiment. This system appears well calculated to secure to the soldier good diet; but, nevertheless, we have reason to believe that the food is not always of the best kind, and that disease is often produced by it.

The drams are served out in the morning at breakfast-time, and after the men have returned from drill,—of all times in the day, perhaps, the worst. This dram-drinking is the source of much mischief; but the custom has been so long established, and so firmly fixed in the mind of every soldier as his right, that we fear there is little chance of its being abolished. It excites the soldier to resort to other causes of intoxication, and from very different kinds of liquor, which, though not sanctioned by the authorities to be sold to soldiers, are to be found in every bazar, village, town, or camp, throughout India, and destroys more European lives than climate or sword.

The standing regulations of all regiments, so far as we have seen, are good, and if acted up to, would doubtless go far to prevent many evils that at present exist; but, although the letter of these regulations may be attended to, the spirit assuredly is not; nor does this depend upon one or two persons in a regiment only; the cordial co-operation of every officer, from the colonel to the ensign, and down to the corporal, will be required to check this destructive and disgraceful system of drinking, which is more or less to be found in every regiment in India;—and without which co-operation, it never can be accomplished, whatever regulations may be established.

Thus it will appear, that the health of regiments that have been some time in India depends more, perhaps, upon the interior regimental arrangements than climate, and shews the necessity of strict attention to the comforts of the men in all essential points; that not only the assistance of Government, but that the concurrent exertions of every commissioned and non-commissioned officer are indispensably requisite to the efficiency of a regiment in India, and to the preservation of life.

We believe it is a fact admitted, that when the mind is excited by any unusual pursuits, disease is resisted for a time under all difficulties and hardships; but, on the other hand, when the novelty which causes this excitement has passed, and despondence and disappointment succeed, the frame soon feels the effect of climate; especially where there is any predisposition to disease, which is no uncommon circumstance after a long voyage. Soldiers and recruits, soon after their arrival in India, are often thus circumstanced. During the period we had charge of the General Hospital at Madras (five years), we had great opportunities of observing the state of men after a voyage, and the state of predisposition in which they usually arrive in the country. In all cases, whether soldiers or sailors, in addition to a state of great vascular plethora and irritability of fibre, the morbid accumulations which had formed in the large bowels were so considerable, as actually to require medical discipline for weeks to restore them to healthy action. This is a circumstance of much practical importance, and points out what should be done upon the voyage to, and on arrival in, India, both as regards the health of the soldier, and the treatment of his disease.

From the nature of the predisposing and exciting causes of disease, and the habits and constitutions of recruits, and other newly arrived Europeans, it will appear that, in the majority of cases, great vascular action is more likely to occur amongst them than in the soldier seasoned by a few years' residence in the climate. With such a tendency, therefore, the extreme impropriety of teaching the young soldier to drink a certain quantity of ardent spirits upon an empty stomach every morning, needs no comment; and it is served to the youngest drummer (many of whom are not more than fifteen years of age) in the same proportion as to the oldest soldier.

To prevent and to diminish this high state of vascular action in the management of young European soldiers recently arrived in India, is a very important indication, and should be always held in view, not only by medical men, but by officers commanding regiments; for, by paying an early attention to the detection of disease while it is yet in embryo, it will be either

immediately arrested in its progress, or brought to a favourable issue before the first symptoms of irritation have passed into inflammation, and consequent organic lesion.

This, however, is a subject too little attended to by the soldier or the medical officer, and it is one of so much importance to the efficiency and healthy condition of a regiment, that we cannot urge in too strong terms the necessity of encouraging men to make their complaints known on the first invasion of disease; and that the custom of designating men skulkers, who complain upon slight ailments, should be reprobated by every person in authority, or who has the command of soldiers. Attention to them on the first appearance of disorder, and encouraging them to make their ailments immediately known, may be the means of saving many valuable lives; for it too frequently happens, that good men, from the fear of being considered skulkers, do not apply for assistance until necessity obliges them, and at a time, perhaps, when all medical aid is useless. We have often had occasion to regret this circumstance in the course of our public duties.

Amongst new arrivals in warm climates, almost every disease commences with slight affections of the bowels; and although these symptoms should be immediately attended to, they are too often neglected. The soldier, being aware of his own irregularities, avoids bringing his complaints to notice, fearing the reproaches that generally follow, and which, on this account, should be studiously avoided, not only by medical, but by regimental officers also, as reproaches prevent him from applying for medical aid at the commencement of these disorders, when a very little care might remove them: by paying deserved attention to this circumstance, many lives may be saved. The most formidable diseases appear in this way, and perhaps the loss of one half of those who die may be attributed to this cause.

It should never be forgotten, that both soldiers and sailors, in all matters that concern their health and welfare, are perfectly children, and should be treated accordingly. Skulking and shamming disorders may not always, perhaps, be easily detected; but it is better that the surgeon

should be imposed upon than that the soldier should lose his life. We cannot too strongly urge attention to this branch of regimental medical arrangement.

We would also suggest, that the drams should be served out to the men in the cool of the evening instead of the morning, if it be necessary to serve them out at all; that the breakfast and supper should be made a comfortable meal, under the inspection of the officers of companies; and that the dinners should be regulated according to the wishes of the soldiers, and not according to the customs of the country.

When treating of the management of convalescence from fevers and dysentery, we took occasion to remark upon the necessity of removing convalescents from those stations or localities which contained the exciting causes of disease, either within themselves or in their vicinity. The importance of this step is shewn, not only in the preventing of relapses and in promoting a more speedy recovery, but also in the prevention of many diseases of the abdominal viscera which are usually not referred to locality for their origin. The same injunction which was urged in respect of convalescents holds with regard to men in the enjoyment of health. When, owing either to occasional occurrences, or to the vicinity of the sources of malaria, a station or place becomes unhealthy, if these causes cannot be removed or greatly mitigated, the necessity of transferring troops to other and more healthy stations is evident. If the unhealthy places must be retained, no more men than are sufficient for the purpose should be doomed to the duty; and if the immediate vicinity offers any situation more healthy, an encampment may be there formed, and a temporary hospital erected for the purpose of receiving those suffering under diseases, in order that they may be removed as completely as possible from the continued and baneful operation of its causes, and there treated under circumstances favourable to recovery.

In India, as healthy situations are generally always selected for European troops as circumstances will permit, and the objections which may be forcibly

urged against many military stations in the West India Islands, have comparatively less ground in the eastern hemisphere; yet still the subject is one of great importance, and deserving attention from the Government and the local authorities. The recollection that ten times as many men perish from disease in warm climates as from war, even in times of war, should render the choice of salubrious military stations, and the removal of troops from unwholesome to healthy places, whether the causes of disease be contingent or permanent, subjects of the very first importance. Some stations are always more unhealthy than others, particularly at certain seasons of the year. These should be partly or altogether relinquished, in favour of such as are more salubrious, if the causes of disease are of that nature which cannot be remedied:* if they admit of remedy or mitigation, the attempt should be made; and when disease appears in consequence of contingent circumstances and events, measures calculated to meet the emergency should be resorted to.

The medical officer should always recollect, that the position of his hospital, whether in fixed stations or in field service, is of the utmost moment to his reputation, the recovery of his patients, and the good of the public service. It should be as completely removed as circumstances will permit from terrestrial and all other exhalations: it should be dry, elevated, and ventilated with the purest air which his knowledge of the sources of impurity may enable him to procure; for one of the chief causes of mortality from the diseases of warm climates, is the circumstance of those affected by them being subjected to the continued operation of their exciting causes during the whole period of their progress, and even during convalescence. In this respect the army medical officer is placed in a different position from the medical officer in the navy, who frequently, and indeed generally, treats his patients entirely removed from the local causes in which their complaints originated, and who is, consequently, enabled to obtain more decided and beneficial results from his treatment, than the practitioner who has both the

* The sources of disease to which military stations are subject in warm climates, particularly in India, are fully pointed out and insisted upon in the chapter on the causes of intertropical diseases, in the First Volume.

disease and the continued operation of its exciting causes, namely, noxious exhalations from the soil, to contend with.

Much more might have been said by us upon the different subjects touched upon above ; and there are various other subordinate topics to which we were desirous of turning attention : but the great extent to which the present Work has insensibly swollen, and the necessity of our immediate return to India, puts it entirely out of our power to dwell longer upon this part of our undertaking. We have thus been reluctantly obliged to confine our observations to a few prominent and important facts, to which we hope to return, and discuss more satisfactorily at a future period, as we consider them of the utmost importance as respects the welfare of the soldier and the efficiency of the Indian army : and we trust the subject may obtain the attention of the authorities both in India and in this country.

A P P E N D I X.

APPENDIX, No. I.

THE following Extracts from some of the late Quarterly Reports made to the Army Medical Board by Dr. BURKE, Inspector of His Majesty's Forces in India, an able and distinguished Medical Officer, will serve to illustrate much of what has been stated by us in this Volume. We beg to express our thanks at this place to Sir JAMES M'GRIGOR, for the use which he very liberally permitted us to make of these important and interesting Papers.

Quarterly Medical Report for Bengal, from December 1825 to March 1826.

THE 11th and 16th dragoons, 14th and 59th regiments, were employed in Upper India, at Bhurtpore, from December 1825 to March 1826.

The 13th, 38th, 47th, 67th, and 87th regiments were in the Burmah country.

The first four of these regiments, with the 44th, were sent to Gazapore, a healthy station, early in 1826.

The 31st regiment, recently arrived in India, were sent to Dinapore, in consequence of their becoming unhealthy in Fort William.

In Upper India, at Bhurtpore, from the 10th December to the 18th January, when the fort was taken, the weather was particularly fine, elastic, and bracing, and the temperature delightfully cool and refreshing: the cold and dry season then prevailed. The water in some of the tanks was supposed to be impregnated with salt.* Of 80 cases of amputation, the whole recovered in fourteen days.

After the capture of Bhurtpore, a marked change in the temperature of the atmosphere took place; and this was supposed to affect the health of soldiers, especially those who heedlessly

* Almost all wells in India are impregnated more or less with salt. The natives generally prefer rain-water.

exposed themselves, under the influence of ardent spirits, to all kinds of vicissitudes, both by day and night. The nights were extremely cold, while the days were excessively hot; the difference of temperature being more than thirty degrees in twenty-four hours.

The European troops, from a life of high excitement and activity, now enjoyed one of comparative repose and inaction, and many indulged in excesses, and the abuse of ardent and deleterious liquors, which were procurable in every village and house. The prevailing diseases proved generally of an inflammatory character, and consisted of fevers, pneumonia, catarrhs, hepatitis, dysentery, and acute rheumatism.

The 13th, 38th, and 47th regiments were engaged particularly in the war at Ava, and had at first severely suffered from the effects of disease in that country, although its climate has been celebrated, and it is at present celebrated with justice, for its salubrity, by almost all travellers who have visited it; yet, owing to the arrival of the army at an *unfavourable season*, our troops suffered as much from sickness as they did at Walcheren, or under more nearly similar circumstances at Carthage.

The 59th regiment continued healthy, and, with the exception of those killed in action, and who died of wounds they received, there is not a single death in this quarter. The number treated was 322; discharged, 253; died, 1. The fevers in this regiment were mild, easily controlled, and speedily cured. Several cases of ophthalmia, which required the frequent and free use of the lancet, all terminated favourably. There were 7 admissions under pneumonia, and 7 of acute dysentery; all were treated on the strictly antiphlogistic plan. In dysentery, mercurials were employed until gentle ptyalism was produced. There was only 1 case of cholera; 73 wounded; 52 gun-shot wounds; 9 incised wounds; 5 ambustiones; 7 amputations. Of the whole number admitted into hospital, only 1 died. Several of the patients discharged cured, for duty or for invaliding, were readmitted, from accidental circumstances connected with their original illness, which will account for any discrepancy in the numbers.

The 11th dragoons were very healthy. Of 176 men treated, 120 were cured, and only 5 died.

The 16th dragoons were healthy. Of 151 treated, 117 were discharged, and 3 died. The prevailing diseases were rheumatism, catarrhs, and bowel complaints. The cases of fever were few, and chiefly arising from atmospherical vicissitudes, or excess of drinking. In one fatal case of hepatitis, an extraordinary disease of the colon was discovered—an intussusception and two holes in the intestine, at a short distance from each other and of the intussusception, through which the fecal matter had escaped into the cavity. The patient was admitted the 28th of January, and died the 7th of March. On the 7th February the belly was first observed to swell, and on the 18th he was reported much easier; tongue clean and moist. It was supposed that at this period the feces passed into the abdominal cavity. The inflammation preceding the erosion checked the issue of the feces into the general cavity, after which the consequent peritonitis hastened his death.

In the fatal case of hepatitis, the right lobe of the liver was completely excavated by a large abscess. There was no other morbid appearance.

His Majesty's 14th Regiment.—After the capture of Bhurtpore, the 14th regiment were left in occupation of it for a few days, during which time they procured the amplest funds, not only for present, but also for future excesses and intemperance in the individuals whose propensities had that bias, and of whom there proved to be but too many. Hence the severe and fatal effects of the diseases which soon began to develop themselves among the most intemperate, the robust and plethoric *especially*. Number treated in the period, 361; discharged, 249; died, 23; 1 in $15\frac{2}{3}$ of the number treated.

The number of acute cases admitted, after taking Bhurtpore till their return to Meerut, was 75; of which 56 were fevers, 4 pneumonia, 15 acute dysentery.

The acute dysentery was accompanied with strong arterial excitement. The fevers had scarcely any marked remission, and there was in all great determination to the liver, lungs, and head, or to one or two of these organs, either alternately or simultaneously. Of the four cases of pneumonia, three of them resembled, in every respect, those cases of fever which occurred at the same time. It was the more marked determinations to the lungs, that appeared from the outset in them, which formed the only grounds for the difference of name. The causes were those already mentioned, with the most uncontrollable excesses and abuse of ardent spirits, of a most deleterious quality, so easily procurable at a cheap rate.*

The mode of cure was strictly antiphlogistic and depletory, general and local bleeding, purging, &c. It was observed that the mercurial affection of the mouth afforded every hope of successful treatment.† Eighty men were wounded in this regiment during the service. Of the cases left behind of this regiment at Meerut, one man died of tuberculated liver and hydro-thorax. Most of the chronic affections had improved during the winter months, and one-third had returned to their duty.

With respect to His Majesty's 13th regiment, it is observed, that after two years' service in Ava, on arriving at Rangoon, in March 1826, they mustered only 338 rank and file, 461 short of their original strength; and as the casualties in the conflicts with the enemy were neither numerous nor very fatal, this numerical difference must be attributed to the effects of disease on the regiment while in Ava; and for want at present of further information relating to the other regiments of His Majesty's service who were employed from the commencement of hostilities in that country, this statement may serve as a criterion by which to judge respecting them.

During the quarter, from the 21st December, 1825, to the 20th March, 1826,—one of most active operations in the enemy's country,—the abstract of the quarterly return of His Majesty's regiments who were at Ava during the whole period shews as follows:—

* For an account of these liquors, see our *Sketches of the Diseases of India*, p. 307—310.

† No doubt, if the mouth became sore the cure might be much easier to accomplish. But does it follow that we should endeavour to make the mouth sore? The calomel was not given to salivate; but it did salivate, in consequence of the excitement having been reduced by free depletion. In our opinion, the salivation was the effect, not the cause, of recovery.

Regiment.	Strength.	Treated.	Discharged.	Dead.	Remaining.
His Majesty's 13th	338	217	193	6	18
His Majesty's 38th	497	184	156	16	12
His Majesty's 47th	619	273	233	11	29
His Majesty's 87th	767	564	467	13	84
Total . .	2221	1238	1049	46	143

The number of deaths in treated, 1 in $26\frac{2}{3}$ for the quarter.

The number of deaths in the effective strength, 1 in $48\frac{1}{3}$ for the quarter.

His Majesty's 44th Regiment.—The cases of chronic visceral disease accompanying intermittent fever, and almost exclusively confined to those soldiers who served in Arrakan, continue to be the most important and obstinate in the hospital. The cases of continued fever have chiefly occurred among the recruits,* and have generally yielded with readiness to depletion by venæ sectio and purgatives. The same remark applies to the cases of diarrhœa.

His Majesty's 67th Regiment.—This regiment embarked at Bombay on the 2d January, and arrived in Calcutta on the 1st March. On the 13th they re-embarked for Rangoon; so that most of this quarter was passed at sea. The casualties have been perhaps as numerous as they would have been in quarters; but the regiment has been, on the whole, more healthy. On the passage from Bombay, dysentery proved very fatal, and was almost entirely confined to one ship. It is stated to be of that kind called colonitis; and one of the symptoms which Mr. Cumming considers characteristic is, difficulty of voiding urine, and pain about the symphysis pubis. Where there is great prostration of strength, great anxiety, and apprehension of recovery, a fatal termination is much to be dreaded.

In the cure, Mr. C. found the most effective mode was the *immediate* and free use of the lancet, whatever might be the state of the pulse and skin.† The dissection of those who died shewed the colon and rectum highly inflamed, ulcerated, and in many parts gangrenous.

Mr. Cumming states, that he saw the same disease prevail in the 82d regiment in 1820, at the Mauritius; and that he has formed the opinion, that mercury, in this variety of dysentery, ought not to be had recourse to.

The disease in the 67th regiment, from Bombay, was confined to one ship; and as the other vessels, with the rest of the regiment, were in company, and of course subject to the same weather,

* We recollect, that when we were with the 78th regiment at Java, on comparing the sickness on the passage between the old soldiers and the draughts into the regiment, it was nearly in the proportion of 80 recruits to 10 old soldiers. Many of the draughts had been at Walcheren and Sicily.

† All acute cases of intertropical dysentery may be called colonitis. In the treatment, after one bleeding from the arm, leeches are better than repeating the general depletion, particularly in those who have been some time in the country.

which was fine throughout, the cause of the disease is to be sought in the vessel itself. The ship was one of 800 tons, and had on board 400 men, women, and children, of the 67th, with a crew of 80 men. The between-decks were badly ventilated, and the heat during the night excessive.* The men had had more license than usual given to them previous to embarking, and had been guilty of great excesses; but this, of course, applies equally to those other ships, as does the following—that from a generous diet they were all put at once upon one which must be considered far from being so, viz. one pound of indifferent salted meat, three quarters of a pound of biscuit, and a little rice: this, with an allowance of country rum or arrack, composed their rations for two months.

“ One fatal case of hepatitis, in which, on dissection, the left lobe of the liver was found entirely destroyed by abscess, intimately connected with the stomach, and discharging itself into that viscus. It had shewed a tendency to open externally for some time, but again subsided suddenly. It is to be regretted that this abscess had not been opened by the medical officer.†

“ *His Majesty's 31st Regiment.*—During the quarter ending 20th March, the prevalent diseases in this regiment were fever and dysentery. Previous to the 20th December, the regiment had

* A similar occurrence took place in the ship we went to Java in; and the following is an extract from our letter on the subject to Dr. Hunter, dated July 5, 1811:—

“ The greatest part of the men who have been ill on board the *Lowger Family* transport, are recent arrivals in India, and most of them had the fever at Flushing: only three of the old soldiers were taken ill (meaning those that had been long in India.)

“ A *kind* of orlop deck was formed at Bombay for the convenience of the troops, extending from the forepart of the main hatch-way forward; and a company occupied this deck, exchanging weekly with the other companies from Madras and Penang. The men were at that time healthy; and it never occurred to me that there was any thing but a properly constructed orlop deck, as most ships have one. By some accident, however, the men were not so regularly relieved latterly, and the sick-list increased wonderfully, seven or eight men being admitted daily. The appearance of the sick was peculiar; the eyes large, full, red, and watery; face very much flushed; heaviness and oppression of the chest; pulse full, hard, and quick; skin hot, dry, and feverish; in a word, they appeared almost suffocated. I confess that I was very much surprised at a circumstance so unusual, and which seemed to increase. But as most of the men who were taken ill had the fever at Walcheren, and afterwards in England, I imagined it might be something connected with that disease: latterly, however, the patients complained of great restlessness at night, which led me to inquire where they slept, and I was informed on the orlop deck. Upon going down to see if there was any unusual cause of this disorder, I was much surprised to find a temporary deck formed for the accommodation of part of the troops, by laying planks across without being caulked.

“ The deck was as clean as possible, but there was a space of two or three inches between each plank, which admitted the heat and vapour from the hold, and made the place so unsufferably hot, that I was surprised how the men could have borne it so long. I took a thermometer down, and the mercury was raised upwards of ten degrees higher than it stood on the gun-deck. I immediately reported this to the commanding-officer, and the men were removed at once to the gun-deck. The good effects of this change were discovered in a very few days, for we had no more of these extraordinary fevers. I mention this as a caution against using such decks in future, as it appears to me to have been a great cause of sickness amongst the troops on board the *Lowger Family*.”

It is possible that a similar source of disease might have existed in the ship here alluded to, though not noticed.

† Unless it points decidedly on the surface, it is, in our opinion, dangerous to operate in those cases.

suffered much by cholera, while stationed in Fort William; but on being encamped on the open plain or esplanade, the disease seemed immediately to abate, and ceased shortly after. The corps left Calcutta in the beginning of February, in a healthy state, having but 69 cases in hospital, chiefly chronic complaints and venereal and surgical cases.

“ On the 19th February, in passing through the Sunderbunds, a case of cholera occurred which proved fatal; but no other case occurred afterwards.

“ Seven men, while labouring under dysentery, were attacked with vomiting and purging, such as occur in cholera, but unattended by spasm; sudden collapse took place in 4 of them, and proved fatal in a few hours.”

During this quarter, 11 cases of dysentery proved fatal, including the 4 above mentioned, and 7 cases of fever had a similar termination. During the latter part of February and the month of March, dysentery, diarrhoea, and fever, formed the majority of the cases treated. In dysentery the symptoms were severe, and the attendant fever generally ran high; the abdominal tormina and tenesmus extremely distressing. The evacuations were various, for the *most part* dark, slimy, and streaked with blood, sometimes watery, with a pale, pink substance, resembling raw beef, floating on the surface; pain about the region of the bladder; urine scanty, voided with pain and difficulty. In the *treatment* of these cases the *lancet* is *not mentioned* to have been used: the proportion of deaths in dysentery was 1 in $6\frac{8}{11}$. Of the cases of fever, many were attended with formidable symptoms; the lancet was stated to have been employed freely and successfully in them, in conjunction with the usual remedies resorted to when depletion is indicated. The proportion of deaths in fever was as 1 in $24\frac{2}{7}$.

The weather in the Ganges is stated to have been extremely variable during this quarter. In the latter end of February and the month of March, the nights were chilly, damp, and foggy, succeeded in the day by great heat; the thermometer in the shade usually ranging from 64° to 85° ; the wind generally from the N.E.; with frequent strong N.W. gales, accompanied with thunder, lightning, and heavy rain.

“ To the variableness of the atmosphere and the incaution of young soldiers, of whom the corps was generally composed, to their irregularity and intemperance, is attributable the prevalence of fever and dysentery.

“ In the *post-mortem* examinations of bodies of fatal cases of dysentery, the morbid appearances are said not to have differed from those stated in the last annual report.*

“ *His Majesty's 87th Regiment.*—During the quarter ending the 20th March, the 87th regiment is reported to have been in the field at Ava, and to have co-operated in the operations of the army from Meady to Yandaboo, and return to Proome, during which the surgeon states the sick were neither numerous nor the diseases multifarious, and the character and symptoms of which did not differ from those in Bengal. The sick of the corps returned by water from Yandaboo to Proome,

* This shews the similarity of the disease at all seasons.

and arrived there on the 13th March, though the regiment which marched did not arrive till the 4th April.

“ In consequence of the Field Hospital being broke up on the 14th March, the surgeon of the 87th regiment received the sick marked in the second column of admissions, on the 15th March into the Regimental Hospital, then established in the same building. The generality of these cases were chronic ones, some of them in the last stage of disease. There is one peculiarity to which the surgeon calls attention,—the tendency of all ulcerated or blistered surfaces to put on a foul sloughing appearance, which was the case with a considerable portion of the sores transferred to him. He soon found that a slight scratch or common blister might become a most serious disease. However, this did not prevail universally. He gives as an instance (of its not being contagious, we presume), that of a patient in the last stage of hectic, with a sloughing stump, and the one next to him unaffected. The most efficacious application he found were fresh vegetables, or charcoal poultices, pumpkin, or some other species of gourds.”

Sloughing and phagedenic ulceration was, it would appear, more general in the *Company's European and native troops* than in His Majesty's forces in Ava, and is described to have been of a very serious nature. We have seen some cases of it in the General Hospital here of the Honourable Company's European Regiment, and a few cases of His Majesty's 87th regiment, that had arrived here after the war. It appears uniformly to have begun (except when wounds or ulcers on other parts took on the morbid action) in the lower extremities, and most frequently on the inner or outer malleolus; from thence it spread with more or less rapidity across the dorsum of the foot, and upwards along the leg, till it destroyed, in some instances, the almost entire substance of the calf: in this state the fœtor was intolerable: a scorbutic diathesis would seem to have been present with these sores. A variety of stimulating unguents, lotions, warm dressings, liquor arsenicalis, dilut. unguent. hydrarg., tincture of myrrh and aloes, spirit. terebinth., lime-juice, alcohol, &c. appear to have been used in these cases. Charcoal and fermenting poultices were very efficacious in checking the progress of the gangrene; and after separation of the sloughs, detergent washes, containing the nitras argenti and sulph. cupri, were mild dressings. The method recommended by M. Dupassay, of laying a thick covering of powdered bark over the sore, and then moistening it with ol. terebinth. was used; but the caking of this paste created so much pain, as to cause it to be relinquished altogether, almost immediately. Lime-juice and the nitric vinegar were given, but without effect. Opiates to relieve the pain, and when the inflammation and febrile symptoms abated, bark and wine in measured quantities, were the only internal remedies from which benefit seemed to be derived.

*General Quarterly Return of Sick of His Majesty's Forces serving in Bengal, from the
21st of December, 1825, to the 20th March, 1826.*

STATIONS.	CORPS.	Strength.	Admitted.	Discharged.	Dead.	Remaining.
Birman Empire	13th Foot	338	217	193	6	18
	38th Foot	497	184	156	16	12
	47th Foot	619	273	233	11	29
	87th Foot	767	564	467	13	84
Cawnpore	11th Light Dragoons .	611	176	120	6	50
Meerut	16th Light Dragoons .	650	151	117	3	31
	14th Foot	909	361	249	23	89
Camp at Bhurtpore	59th Foot	787	322	253	1	68
On the River to Dinapore .	31st Foot	967	588	495	21	72
On the River to Gadapore .	44th Foot	668	259	170	12	76
Calcutta	67th Foot	580	267	242	17	8
	Total	7293	3362	2695	129	537

Quarterly Medical Report for Bengal, from the 31st March to the 20th June, 1826.

“ THERE have been various movements among the King's regiments in the Bengal Presidency during this period. Those in Upper India, as in the former report, from December 1825 to March 1826, consisted of the 11th and 16th dragoons. The 14th and 59th regiments returned from Bhurtpore to their cantonments; the 11th dragoons and 59th infantry to Cawnpore; the 16th dragoons and 14th infantry to Meerut; the two regiments of dragoons only having changed quarters.

“ The two stations of Meerut and Cawnpore are nearly similar in climate and vicissitudes of temperature, Meerut having the advantage of Cawnpore as to northern latitude, — the first being in lat. 29° and east long. 78°, — the latter in 26½° lat. and 80¼° east long.

“ The warm season began as usual in March, when the hot winds set in, and continued till the rains commenced, in June.* The beneficial effects of the rains were soon apparent in animal as well as vegetable life.

“ The range of the thermometer, as experienced in Upper India, appears to have been generally, as follows : —

	Maximum.		Medium.		Minimum.
April 20th.....	95	.....	83	.....	71
May	96	.....	87	.....	78
June	98	.....	90½	.....	83

* The land winds in the peninsula of India set in about May and June.

In Bengal and at Calcutta —

	Maximum.		Medium.		Minimum.
April 20th.....	99	.....	91	.....	77
May	96	.....	87 $\frac{1}{2}$	.....	88
June	90	.....	84 $\frac{1}{2}$	.....	79

“ During the latter part of March, and the whole of April and most of May, the nights and mornings continued of moderate temperature, affording refreshment, by sound sleep, from the excessive heat and fatigue of the day, the fiery temperature of which is most oppressive and overwhelming, if its fury be not tamed by a rapid evaporation from wet tatties, which, with a steady breeze, will cause the thermometer to sink many degrees.

“ Such screens are always kept moist to the windward doors and windows of all houses, and of the hospitals and barracks in many of the stations, especially in the upper stations, and add much to the comfort and health of the inhabitants.

“ From the commencement of May, the temperature was generally 92° to 96°; towards the end of it and beginning of June, it was 96° and 99°.

“ His Majesty’s regiments the 13th, 38th, 47th, and 67th light infantry had left Rangoon shortly after the 20th of March, and arrived in Calcutta in April last, when they were all quartered in Fort William, and crowded beyond measure in the confined and ill-constructed barracks of that fort, and which, in fact, are only calculated to hold one battalion. The 13th and 38th regiments were sent in boats up the Hoogley, as fast as the means were procurable, to their stations at Berhampore. His Majesty’s 47th regiment remained to garrison Fort William; and the 67th had volunteered previous to embarking for England.

“ This was the state of His Majesty’s troops at Calcutta at the end of April and beginning of May, when I arrived from the Upper Provinces. His Majesty’s 31st regiment had not reached their station at Dinapore till the month of April. His Majesty’s 44th regiment were at their station at Gazapore in the same month.

“ The prevailing diseases during this period were generally of an inflammatory character,—fevers, acute inflammation of the liver and other viscera, dysentery, and cholera.

“ The total admissions of fever were, under the heads febris remitt. 377; of continua communis, 1172, of which 419 were in the 31st regiment, recently arrived from Europe; of intermittent, 123, of which 110 were of His Majesty’s 44th regiment, from Arrakan.

“ With respect to fevers under the head of remittent or continued, although the accession and termination of the paroxysm might have been, in the generality of cases, under the former head, so far, more distinctly marked as to warrant the division, yet both appeared to arise so much from the same causes, and to be relieved by the same remedies, that they deserve only to be considered as accidental varieties. All generally assumed the type of synocha, with symptoms of strong inflammatory character; pain of head, with sense of weight and great determination to it; great uneasiness of the epigastrium; pains of the loins and large joints; heat of surface; nausea; bilious vomiting;

pulse generally rapid and full, often hard and vibrating, sometimes oppressed and labouring; tongue loaded; bowels often constipated, sometimes relaxed.*

“The newly arrived Europeans in His Majesty’s 31st regiment, and the recruits in the 13th, 14th, 38th, 44th, and 47th regiments, suffered more particularly from this form of fever. Many of the subjects of it were admitted in a state of total insensibility, produced by exposure to the sun, or from such exposure and indulgence in spirituous liquors conjoined.

“In this and all acute diseases of India, if the first twelve or twenty-four hours are lost, all is lost; for this is the period that, by active treatment and depletion by blood-letting, followed by purgatives, the disease may be brought under control, by an impression being made on the constitution, and by breaking the morbid association, before serious structural derangement has supervened.† The subsequent treatment is to be guided by circumstances. Where there is headach, the head is to be shaved, and wet cloths applied, or leeches or blisters. Calomel, combined with camphor and antimony, proved useful auxiliaries, by allaying irritability, and determining to the surface of the body.

“It will be seen, however, during this quarter, as appears to be the case in corresponding quarters of every year in Bengal, that there sometimes occur fatal cases from exposure to the sun, and its acting on the young and plethoric, or upon systems under indirect debility from previous intemperance, which are clearly more allied to apoplexy or phrenitis than to fever, as has been experienced unfortunately in above twenty cases of His Majesty’s 13th regiment, in several of His Majesty’s 31st, in three of the 59th, one in the 14th, and one in the 11th dragoons. The duration of the attack is very short, sometimes not an hour, notwithstanding the most immediate medical assistance. Dissection usually discovers great determination to, and serous effusion in, the brain, and generally a highly vascular state of the stomach.

“*Intermittent Fever.*—This fever was prevalent only in His Majesty’s 44th regiment, together with visceral affections consequent on the Arrakan fever, from which have arisen numerous cases of indurated, tuberculated, and chronic affections of the liver, diseased and enlarged spleens, and functional derangements of the gastric and intestinal viscera, and are almost exclusively confined to those who served in Arrakan during the last year. From the accounts we have received, the *situation and localities of Arrakan* seem to constitute a fruitful source of fever; the town being placed in a sort of basin,‡ surrounded by hills, and more immediately invested by jungle and morass. The waters of this morass, in conjunction with that of the tide from the river, actually flowing under the houses,|| which are raised from the ground on piles. The grand difference between Arrakan and the Delta of the Ganges consists in a want of a general and abundant annual inundation.

* See our report of the field force in Malwa, in our Sketches of the Diseases of India, which is well illustrated by this report.

† See our reports in the work already cited, pp. 277, 285, 320.

‡ Like Seringapatam.

|| Like Malacca and all Malay towns.

“ The post at first set apart for the reception of the sick is represented to have been very unhealthy, and on that account abandoned. As the troops advanced into the country, the increase of disease was progressive. In the middle of July the sickness was at its height. The fever at first appears to have been of a mixed kind, partaking both of the intermittent and remittent character:* one feature in it was the suddenness with which death often supervened, when, to all appearance, the patient was in no danger. This was observed also in the Walcheren fever.†

“ In the Arrakan fever it would appear that lassitude and a sense of coldness ushered in the attack; but a distinct rigor was seldom noticed. To these succeeded the usual symptoms of fever; the stools being very scanty and unsatisfactory. In some instances, the febrile symptoms are stated not to have developed themselves, but were repressed by the first action of the febrile cause. The patient walked about with the disease, as it were, hanging about him, when violent re-action at last burst forth and suddenly carried him off. As the sequelæ of fever, dysentery and diarrhœa often proved fatal. The cause of the sickness was to be found in local influence; but the supplies of bad or inferior articles of food and clothing contributed to it, and retarded convalescence.

“ In the treatment of the fever, the prevalent form of sickness among the troops much depended on the period at which it was instituted. Decision at the onset often saved the patient, and prevented a protracted malady, and the medical officer much care and anxiety. The most approved practice was to bleed *ad deliquium animi*, or to the marked relief of the symptoms. In cases of determination to important organs, purgatives with calomel were of the first utility; but where the spleen was evidently diseased, brisk purgatives, composed of pulv. jalap., scammon., rhubarb, potassæ super-tart. magnesiæ carbon., afterwards combining them with pulv. calumb. and ferri sulphas, were found most effectual; and the conclusion came to generally was, that the mercurial action was improper where the spleen was diseased. After the fever had continued some days, hyoscyamus and conium appeared to relieve the general irritability. Bark seemed to have had little good effect, and its early exhibition was supposed to cause these abdominal enlargements called physconia,‡ of which there are numerous cases of the 44th as well as 47th, now in hospital here, who are liable to attacks of diarrhœa or dysentery, during which the *enlargement of the abdomen disappears*, but returns again with the convalescence from the bowel disease.

“ A variety of remedies appear to have been used by the surgeon of the 44th regiment in these cases of intermittents with visceral affections; but generally with little permanent effect. The sulphate of quinine puts a stop to the paroxysm; but, upon ceasing the remedy, the fever soon returns generally, especially if there be splenic affections. The use of wine in this disease is of very doubtful, if not of very noxious effect. Although, in a great number of these cases, there has been considerable difficulty in preventing the periodical recurrence of the febrile paroxysms, yet this has not been the chief difficulty; the disposition has always remained, and causes scarcely appreciable sometimes are constantly exciting it into fresh action. Thus a patient may continue for many days or weeks convalescent, and then suffer a relapse equally intense with the first attack, while

* See the fever at Nagpore, in *Sketches of India*.

† See Dr. Grierson's report of the Arrakan fever. Bengal records.

‡ A similar fact is stated in our *Sketches of the Diseases of India*, pp. 302 and 327.

every successive paroxysm increases the local functional or organic derangement, and thus diminishes the chance of final recovery.* In quartans which are severe and obstinate, as they generally are, a sea voyage is *necessary* towards recovery; and where the spleen is diseased, some practitioners state they have witnessed the good effects of the actual cautery or moxa, as usually applied in enlargements of this viscus by the native practitioners.

“ *Acute Dysentery*.—Treated, 631; discharged, 447; died, 54, or 1 to $11\frac{3}{4}$. This disease has been most prevalent in His Majesty’s 13th, 31st, and 47th regiments. In the 13th, among the volunteers and recruits; in the 31st, as newly arrived; in the 47th, among the recruits, and more especially as the effects of that regiment being quartered in Fort William during such a period.

“ In the quarterly returns of the 20th June, there are, under the head dysentery, of His Majesty’s 31st regiment, 80 cases; and of diarrhœa, 65 treated, and 11 died. The surgeon, Mr. White, states, that nothing further had been elicited by dissection, than that the disease, as he found it, was an inflammatory action of the large intestines.

“ In the 47th regiment, 145 cases of dysentery have occurred, and 20 died. The great intestines were found to have suffered more or less severely; but this would appear often to arise from contiguity, and the extension of the inflammation from the small intestines in which the disease originates, as was evident from the umbilical and hypochondriacal regions having been the seat of pain. In the generality of cases, however, in the above two regiments, as well as in the cases of dysentery that had occurred in the 67th regiment, in the last quarterly report, the colon and rectum appear to have been primarily affected. The morbid action when it extended to the ilium was always in a less degree; and in some instances this gut did not appear to have been in any way implicated in the disease. The distinction between this and other forms of dysentery is of practical utility, inasmuch as it differs in its symptoms, and requires a different mode of treatment. In colonitis, or the erythematic inflammation of the large intestines, pain on pressure was generally complained of along the whole course of the colon, from the caput cæcum to its termination in the rectum. The pain generally was obscure, but sometimes of a more acute nature, and sensibly felt on that part of the abdomen which corresponds with the centre and right of the arch of the colon, with its sigmoid flexure. Occasionally, this diagnostic symptom was not present; strong pressure on, and feeling of the abdomen with the finger and hand, excited no other uneasiness than a healthy person would experience if subjected to such examination, and that too in patients in whom dissection had shewn that the most extensive ulceration must have been going on at the time in both the colon and rectum.

“ In this variety of dysentery there does not appear that incessant desire of going to stool that occurs in the common form of the complaint. The purging, tormina, and tenesmus, are comparatively moderate; while, on the other hand, the general debility and mental depression are remarkably great. The stools are seldom of a bilious character, and rather indicate a de-

* This proves what we have stated in the text, and in our Sketches, p. 361.

iciency or suppression of the hepatic secretion. At first these are most frequently of a light-yellow and semi-fluid appearance, with or without blood; latterly they become bloody, purulent, and highly fetid.

“ There are few diseases in which delay in the application of the remedy is productive of worse consequences than dysentery; and hence with soldiers, who are ever known to submit reluctantly to the restraints and privations of an hospital, it often happens that the success of the treatment is nearly in an inverse ratio to the mildness of the early symptoms. In the treatment of the full and plethoric, general bleeding was necessary and beneficial: in those who have been long in India, topical bleeding with leeches is preferable and more effectual; large doses of calomel, followed by oleum ricini, and sometimes other purgatives, enemas, &c.* It has been experienced, that the application of leeches to the perinæum in the first or more inflammatory stage, has given decided relief; and in reference to the anatomical distribution of the nerves and blood-vessels in this part of the body, it will readily be perceived how directly the abstraction of blood from the perinæum must operate on depleting the vessels of the colon. The branches of the external hæmorrhoidal vein communicates freely with those of the internal, the main branch of which, running upwards along the back of the rectum, is joined to the cœliaca sinistra. The ramifications of this last vein anastomosing with the branches of the ileo-colica on the left, and with the colica media on the right, and by the junction of the branch of the colica dextra with those of the ileo-colica and colica media, the blood is returned from the whole arch of the colon. By withdrawing blood, therefore, from the perinæum, we are enabled to relieve, in the most direct manner, the congestion in the vessels of the colon. It is a mode adopted by some medical officers here, and had been used by the natives and some French practitioners.”

“ *His Majesty's 11th Dragoons, Cawnpore.* — Total treated in the quarter, 229; discharged, 168; died, 3. — The surgeon observes that, until the rains, the weather was extremely hot and oppressive at Cawnpore. During the latter part of the day the thermometer was constantly at 94, 96, and 98°, from two or three o'clock in the afternoon till late at night; and once, at eight, P.M. was at 99°. On the 5th June a heavy fall of rain brought the mercury down to 84°: the good effects were immediately evident, from the fewer number of admissions:† had not the rain fallen, it is stated there would have been most probably many casualties. During the intense heat, there were admitted a number of cases of fever, classed under the head of *Continued*, but of a bilious and congestive character, marked by great uneasiness over the epigastrium, with a sense of weight and great determination to the head, burning surface, loaded tongue, with a hard vibrating pulse, often, however, oppressed and labouring, calling for the prompt and bold use of

* Dr. Burke's observations here fully confirm the opinions espoused by us in our Sketches and Reports, and in the present Work, where we treat of dysentery.

† See our reports on the ceded districts, and the diseases of *Kurnool*, in our Sketches.

the lancet, emetics, and large doses of calomel, followed by active purgatives. These means seldom failed of giving relief; and when they did fail, the surgeon believed it to be always owing to the presence of some previous visceral disease, and that probably to the extent of disorganisation."

Dr. Burke thinks the successful introduction of vaccination has not been commensurate with the labour and zeal used in the cause: he says, prejudice and hatred of innovation, which so remarkably distinguish the Hindoos, predominate throughout the Peninsula. He says, during the rainy and damp weather, the vaccine infection is resisted, and out of twenty vaccinated, not above one or two will take the infection: this occurred at Bahar; but higher in the country it is annually lost, and cannot be kept up in the *rainy* season, though the thermometer is then lower than in the hot and dry season, which serves to shew an influence independent of atmospheric heat.

"*His Majesty's 16th Light Dragoons, Meerut.*—From the 21st March to the 20th June, treated, 197; discharged, 153; died, 2.—Of thirty-two fevers which occurred, three-fourths were from excessive indulgence in spirituous potations; some were affected with delirium tremens, in which the use of opiates was found most beneficial. Six cases of pneumonia, supposed to arise from some affection of the heart. Seven cases of liver; one fatal case, a hard drinker, who had received a severe injury by a fall: there was an abscess in the liver containing *blood* and *pus*, and he passed large quantities of blood by stool, unmixed with *fæces*. Some cases of measles. Nineteen cases of dysentery; one died: the lancet was useful, followed by calomel and antimony. The fatal case was a young man, *ætat.* 24, three years in India: he had laboured under repeated attacks of severe and obstinate bowel complaints since his arrival, and he was re-admitted on the 31st January last, when in camp. Blood-letting, general and local, mercury, &c., and other remedies, were used in vain.—*Dissection* discovered extensive disease in the abdominal viscera. The liver was considerably enlarged, and, when cut into, perfectly dry; it was much harder than natural; the gall-bladder contained a small quantity of pale bile; the small intestines were of a dark-red colour, and in many places approached to a state of gangrene;* the villous coat of the colon, for a considerable extent, was in a state of ulceration; the lungs were diseased, and found diminished to less than the fifth of their natural size, and were much firmer than usual, the diseased and enlarged liver of course having affected them.

"*His Majesty's 59th Regiment, Cawnpore.*—Treated, 619; discharged, 503; died, 7; in the quarter. There are in the column of *febris continua communis* two hundred admissions, and in that of *febris remit.* twelve; but although the accession and termination of paroxysms might have been, in the few cases classed under the latter head, so far more distinctly marked as to warrant the

* A distinction should be made between gangrene as it affects the destruction of the gut, and a high state of venous congestion in the vessels giving them a dark colour.—J. A.

division, yet both appeared to arise so much from the same causes, and to be relieved by the same remedies, that they ought rather to be considered as mere accidental varieties: both assumed the type of synocha. The attack in the commencement being attended with strong symptoms of inflammatory action, and the treatment required most strictly antiphlogistic, bleeding was freely and generally employed; and in some cases, when the increased action was violent, this evacuation, to a considerable extent, was found to be necessary.

“ *His Majesty's 14th Regiment, Meerut.*—Total admitted in the quarter, 349; discharged, 243; died, 9.—On the 29th of March, the remainder of the men sent to general hospital, Bhurtpore, on the 5th of February, joined their regiment. They were in number twenty, eighteen of whom were wounds.

“ The prevailing diseases of the quarter were fevers, hepatitis, and rheumatism.

“ The fevers yielded to depleting treatment. Most of the cases of hepatitis were relapses, and one of the cases having followed a severe attack of fever in camp.

“ Four of the nine deaths which occurred in this quarter were men who had been attacked with inflammatory fever in camp. One admitted 27th February, and died 22d March: the high arterial action continued till within twenty-four hours of his death; he was bled to 148 ounces, and the antiphlogistic plan adopted.—*Dissection* shewed the liver enlarged and suppurated; the right lung forced into a narrow space; the spleen large, and adhering to the diaphragm. The stomach exhibited vascular marks on its inner surface. The various coats of the large intestine disorganised, and breaking up under the finger: the bands of the colon cartilaginous, and the canal of the intestines contracted.

“ *William Crawford* was brought to hospital from camp in a state of stupefaction from excessive drunkenness, from which he was aroused by bleeding, blisters, purgatives, &c. He escaped from the tents the 18th of February, got drunk again, and remained in a state of idiocy till his death, on the 22d of March.—*Dissection* shewed the same effects of high inflammation, more particularly affecting the dura mater and brain: in one case of this kind (Keefe), the left lung occupied a very small space, and the cavity was filled with a solution resembling a soap solution. Wrench and Sergeant Douglass's cases were similar, and the same appearances were observed on dissection.

“ *His Majesty's 13th Regiment Light Infantry.*—This regiment sailed from Rangoon on the 27th of March, and arrived at Calcutta on the 16th of April. The number of sick embarked was 18. During the voyage they lost three men from chronic dysentery, old cases. The regiment was healthy, and sent only 16 to hospital on landing: they were then joined by 278 recruits, all fine young men, but at the time rather sickly, nearly one-third of them being in the general hospital.

“ The end of April, the 13th were ordered to proceed to Berhampore by water; as far as (in the shallow state of the river) the boats would be able to reach. The first division disembarked from the boats on the 3d of May, at midnight, and immediately marched for their first fixed camp,

said to be distant fourteen miles. The night was excessively hot and sultry; and the recruits, constituting one-half of the number, began at an early period to feel the effects. When the sun appeared, with tremendous power, an excessively hot wind prevailed, and there was no shelter. Under these distressing circumstances the men had to complete a march of twenty-one miles; the scene soon became most distressing, and the effects proved almost immediately fatal to 20 of the recruits, and 63 more suffered from violent attacks of fever. The recruits were the principal, and almost the only sufferers, on this melancholy occasion. The second division of the 13th, and the whole of the 38th regiment, escaped the danger; for, taught by the effects on the first division of the 13th regiment, they went farther up the river, and thus avoided the length of march and its fatal consequences.

“ *His Majesty's 38th Regiment* — sailed from Rangoon on the 25th of March. The whole of the sick were embarked; and of the 18 received from the field hospital, many were much reduced, and held out but little prospect of recovery. Three died on the passage; two of chronic dysentery, and one of anasarca.

“ On arrival at Fort William, the sick were taken into the general hospital, and remained there till they embarked with the regiment on the 1st of May, for Berhampore.

“ On the passage up the river Hoogly, they lost four cases by cholera, one by dysentery, and one by fever. Two cases of cholera died at Berhampore, and one case of enteritis. This was a very acute case, and the pain of abdomen most severe. On *dissection*, the arch of the colon appeared thickened, with some congestive spots on it, but *no inflammation on the internal surface*: when laid open, the concave surface of the right lobe of the liver, and the posterior portion of the inferior lobe of the right lung, were much congested. The spleen and left kidney were slightly enlarged; and on the stomach the rugæ were covered with a *black substance like charcoal*.

“ In intermittents, Mr. Cathcart has of late combined calomel with bark, in the proportion of—bark, ʒj.; calomel, gr. iij., given every three hours; which he thinks appears to bring so obstinate a disease sooner under control than any other remedy, and without leaving any visceral obstruction behind, so common a sequela of the disease.

“ The different cases of hepatitis were better marked, and of a more obstinate character, than what he usually witnessed; they require copious venesection, purgatives, large doses of calomel, blisters, &c. In one fatal case, a large abscess was found in the right lobe of the liver.

“ In dysentery and diarrhœa, he observed nothing new; he considers the latter as a modification of the former, and equally difficult to combat. Venesection, warm bath, blisters, purgatives, and calomel, were the usual remedies in the early stage; astringents and absorbents when the urgent symptoms were removed.”

*General Quarterly Return of Sick of His Majesty's Forces serving in Bengal, from the
21st of March to the 20th of June, 1826.*

STATIONS.	CORPS.	Strength.	Admitted.	Discharged.	Dead.	Remaining.
Cawnpore	11th Dragoons	606	229	168	3	58
	59th Foot	791	619	503	7	109
Meerut	16th Dragoons	644	197	153	2	42
	14th Foot	907	349	243	9	97
Berhampore	13th Foot	591	434	332	41	61
	38th Foot	479	205	160	12	32
Dinapore	31st Foot	358	870	651	60	159
Ghazee pore	44th Foot	573	574	441	17	116
Fort William	47th Foot	593	688	495	37	156
Rangoon	87th Foot	725	607	423	35	149
		6767	4772	3569	223	979

*Extracts from Dr. Burke's Annual Medical Report for Bengal to the Army
Medical Board for 1825.*

“ IN April and May, during the hot winds, ephemeral fevers prevail, which yield easily to timely and proper treatment. At the commencement and termination of the rains, the prevailing diseases are fever and dysentery, which prevail some seasons more than at others; but they are general throughout the command.

“ The symptoms in these fevers are those of cerebral, gastric, and enteritic determination, which characters are more particularly remarked in the fevers which prove so generally and quickly fatal among European troops at Meerut and Cawnpore annually, at the commencement of the rains, and in which the collapse is so great as often to preclude the possibility of effecting a recovery. This appears to be the principal peculiarity of disease observed in the different localities of the command.

“ The type of fever, however, is generally remittent, or rather bilious remittent. Sometimes the disease assumes the quotidian, tertian, and double tertian type. Sometimes the fever is synochal, terminating in typhoid symptoms, such as great prostration of strength, severe determination to the head, brown and dry tongue; but it is not contagious: it terminates often in troublesome intermittents.*

“ In the fever as more peculiarly observed among the recruits, the symptoms first supervening were,

* This well illustrates our observations on the fevers in the Mysore, Hydrabad, Carnatic, &c. in our Sketches of the Diseases of India. See p. 266, &c.

sudden and unusual pain in the head, giddiness, vertigo, nausea, lassitude, faintness, and sinking of the vital powers. These were the sure signs of the effects of climate and miasma, ready to burst forth in all their violence. This state was succeeded by reaction in the most violent degree, so that the most copious and immediate vascular depletion was requisite to subdue it, and prevent the consequent disease, which, among the recruits, was remittent fever of the severest type. The remedies generally employed in the early stage were, emetics, bleeding, general and local purgatives, blisters, cold affusion, &c. Temporising treatment, at this period especially, was found to be attended with the worst consequences, to induce protracted disease, and to be destructive to the constitution."

It was found that the constitution, in fevers occurring at the termination of the rains, does not bear such large bleedings as at the commencement of the rains. In the majority of the fatal cases, effusion generally took place in the cavities of the brain. Every man who had fever, or returned with it from Arrakan, laboured under morbid affections of the viscera, but especially of the spleen; and these men were always liable to relapse and frequent return of fever. The treatment found most efficacious among the Europeans in Bengal, in splenic disease, was a steady use of purgatives in conjunction with the preparations of iron and bitters, great attention to regimen, spare diet, little drink, and abstinence from wine, or stimuli of any kind.

Extract from the Returns of the 59th Regiment for 1826, Bengal.

"THE greatest number of fevers were, (as stated by the surgeon,) on their admissions, of the continued form—synocha or synochus.* A great proportion of them became remittent, and some intermittent, during the season when marsh effluvia prevailed, as at Berhampore, at the termination of the rains. The deaths under this head were 22; and, by reference to the cases, they occurred from abscess formed in the liver, from an attack of cholera, from effusion in the cavity of the brain, from exposure to the sun, from chronic ulceration in the large intestines, or from some other visceral disease.

"The surgeon observes, that with regard to the phenomena of the class of febris of this climate, it is to be particularly remarked, that few, if any, occur that are not more or less implicated with topical affections of some viscus; and this remark, he thinks, applies strictly to all fatal cases of fever. During this year, and from observation, it is confirmed by post-mortem examination.

"The endemic or epidemic of this country, as the European febris continua communis, modified by climate and season, in healthy subjects of regular habits, is stated by the surgeon to be fully under the control of the physician."

Among the diseases of the abdominal viscera, 30 cases appear of acute, and 14 of chronic hepatitis. This demonstrates that liver disease is more common in this part of India than the returns shew.

* It seems that these continued fevers occurred during the hot season, and the remittents in the cold and rainy season.

Extract from the 44th Regiment's Report.

"REMITTENTS and febris continua communis are common in Calcutta, in May, June, and July, at the commencement of the rains, and again in October, when they cease. The majority of these cases yielded readily to active depletions in the commencement. Some cases, however, were of a more formidable character, with much determination to the head or to abdominal viscera, and great prostration of strength. In the greater number of cases, the head seemed principally affected, though in others the spleen and stomach appeared to have been the chief seat of disease. Some cases presented the characters of synocha, without any marked local determination of blood."

In 9 sick officers, 6 who were bled recovered; 2 who were not bled, and had taken bark, were not recovered eight months afterwards; and 1, who would not be bled, died comatose on the thirteenth day of his illness. Bark, wine, and opium, were considered pernicious remedies. Depletion in all ways, but particularly on the abdomen, was most successful. Continued fever was more prevalent among the recruits than the old soldiers. Fever, on one occasion, succeeded cholera. Dr. Burke, in his report for Bengal for 1826, makes the per-centage of disease, in that command, upon the effective strength as follows:—

Bengal Returns for 1826.

	Per cent.
Fever.....	80
Hepatitis	5
Bowel complaint	48
Pulmonic diseases	7
Venereal	12
Cholera	4 $\frac{3}{4}$
Ulcers	8
Rheumatism	6 $\frac{3}{4}$
Ophthalmia	3 $\frac{1}{2}$
Other diseases	32

Madras Returns for 1821, in round numbers.*

	Per cent.
Fever.....	34
Hepatitis	17
Bowel complaint	28
Pulmonic diseases	—
Venereal	25
Cholera	3 $\frac{1}{2}$
Ulcers	5
Rheumatism	7
Ophthalmia	3
Other diseases	32

Deaths at Madras on the Effective Strength.

	Per cent.
Fever.....	7
Hepatitis	11
Dysentery.....	25
Cholera	5

* See our Sketches of the Diseases of India, Table XXI.

The following Extracts are taken from a very able Report made by Dr. Burke to the Army Medical Board for the Year 1826.

“ AMONG the men of the 44th, and others with splenic disease, complaints are seldom heard of pain in the spleen; on the contrary, the symptoms of the existence of the disease are generally obscure. There is an instance of much disease having existed in it without its having been ever complained of, in the fatal case of George Cowell, of His Majesty's 14th regiment, who died of the bite of a snake in less than three hours after the accident, and who had not been ill or in hospital previously, but in whom dissection shewed an indurated spleen adhering to the stomach, in the large curvature of which two perforations existed, one of the size of a goose-, and the other of a crow-quill, communicating with the diseased spleen, the external surface of which round the adhesion was cartilaginous. In the stomach, where the perforations existed, there was a singular lesion, without any marks of recent ulceration, — an example probably of that class which Dr. Baillie distinguishes from scirrhus and cancer in it.

“ Disease of the spleen is prevalent throughout Bengal: it is generally attendant upon constitutional disease of a peculiar nature, and in which the treatment is required to be most guarded.

“ The enlargement of the spleen is also here generally attended with a morbid state of some of the other abdominal viscera.

“ The native treatment of the spleen is the enforcing an abstemious diet, with very little drink, and the use of purgatives with tonics: the common medicine is a mixture of aloes, garlic, and vinegar, with a preparation of iron, as the common copperas of commerce. By means of this, two or three motions are to be produced daily, till the disease be removed, and the excretions healthy. In obstinate cases, they employ moxa or the actual cautery, their mode of using which last is by making a few scarifications on the side, above the spleen, which are allowed to bleed till it ceases, when the cautery is applied to each. This is the cause, that out of every ten natives in Bengal, four will be found with marks of the above operation having been performed on them.

“ There are in the men of the 44th two marked stages of spleen disease, the *active* and *passive*. In the first, there appear irritation, sometimes a short cough, pain of left side, extending sometimes upwards, probably from an inflammatory affection of the peritoneum in the neighbourhood of the spleen, and extending to the capsule of the organ itself: there is little or no appetite for food. In this stage local bleeding may be advantageously resorted to; and if ever mercury can be used with safety in the disease of the spleen, it may be had recourse to in this stage with less danger.

“ In the *passive stage*, the spleen is enlarged, and appears indolent, unattended with pain, or only with a slight degree of it, when manipulated.

“ The appetite is morbidly and remarkably increased, in consequence of the digestive process of course being more perfect.

“ There is an indurated chronic state of the spleen, which would appear not to be within the reach of any medicine.

“ The treatment found most efficacious among the Europeans in Bengal, in splenic disease, is a steady use of the purgantia in conjunction with the amara, and martial preparations, great attention to regimen, spare diet, little drink, and abstinence from wine or stimuli of any kind.

“ The purgative generally adopted is similar to that called Dr. Schoolbred’s mixture, which is formed on the basis of the medicine used by the natives. The prescription in general use is — R Pulv. jalap., rhei, scammon., potass. supertart., pulv. colomb. āā ʒj.; ferri sulph. ʒss. M. ft. pulv., of which such a dose is taken, morning and noon, as to procure two or three free motions daily. The quantity of the preparation of iron may be diminished, should it be found to induce any symptom of pyrexia.

“ Should the medicine (from long continuance, &c.) be found not so effectual in moving the bowels, it is better to change it; and a drop of ol. croton. will generally be found to succeed in procuring motions. When the precaution of opening the bowels is omitted in this disease for a day or two, it is sure to be succeeded by a paroxysm of fever.

“ The use of mercury is, by the natives, held to be destructive in this disease; and when used even in small doses, it has been observed in the hospital practice here to induce profuse salivation, which leads to sloughing ulcers, and gangrene of the fauces, lips, and cheeks, and ultimately to prove fatal. This tendency to sloughing ulcers, in cases of splenic disease, would appear to be remarkably ascribable to the state of the constitution co-existing with that disease.

“ Dysentery with anasarca are the symptoms most to be dreaded in it; but it is necessary to distinguish between the attacks of dysentery and those of diarrhœa or simple purging, which is found generally rather to relieve than aggravate the disease.

“ *July* and *August* were uncommonly sickly months, but chiefly the latter. The admissions of fevers were numerous, and attended with great determination to the head, with præcordial heat and oppression, hot skin, and dark, watery, offensive purging. Some of these cases, after three or four days, assumed the type of irregular intermittents, while others occasionally terminated in cholera. In many, the predisposition to run into cholera was marked by a dark sunken countenance, pulse small and thready, with indescribable feelings in different parts of the body, said to be a pricking, painful sense of numbness, something like cramp, or mixture of both, with great restlessness and want of sleep. In some, this painful numbness was general; in others, confined to one or both arms, feet, legs, or thighs; and in all those who complained of it, the countenance had a *threatening cholera look*; the skin cold; the pulse thready, indicating a tendency to cholera. In all, vertigo and the watery purging were constant symptoms. The former was particularly complained of, with sense of weakness.

“ Of eight fatal cases, under the head fever, four terminated in cholera, and three of the others occurred in men who had suffered from constant attacks of fever, hepatitis, and dysentery, in all of whom great visceral disease existed. Twenty-one cases of cholera occurred during the year; and several patients, in hospital with other diseases, in *July* and *August*, were suddenly attacked with it in its most formidable and destructive shape, while under the influence of mercury, and terminated fatally.

“ There is a case related by the surgeon of His Majesty’s 11th Light Dragoons, of a steady young soldier, who had been marked down in the morning’s report as well, and for discharge to duty on that day; but who, in the mean time, while walking in the Hospital verandah, was seized suddenly with cholera, and died in a few hours afterwards.

“ Affections of the spleen have been much more decidedly marked, and they appear to be pretty

generally attended by the symptoms of inordinate action of the heart. Bleeding has been of temporary service, mercurial affection of but little: the most decided benefit has been rendered by a mixture of aloes, garlic, and vinegar, often used in this country to relieve splenic affections among the natives; it purges gently, produces large secretion from the kidneys, and may possibly possess a further specific effect on the functions of the spleen. The men who suffer most from this disease are irregular livers, who generally follow their old courses after their discharge from hospital. In consequence, several of the admissions under the head of splenitis are relapses.

“The cases of rheumatism have been numerous and intractable as usual; a disordered state of the functions of the liver has appeared very plainly in many instances. Mercurials seldom fail of procuring relief, and for a time total cessation of all pain; but it is seldom that a permanent cure is effected. The liquor arsenicalis has been strongly recommended, but it has proved far from efficacious; it has been administered in gradually increased doses, alone, and with opium, for a long continuance, in many cases, with no good effect: a few, however, have recovered while under the influence of this medicine, and a few from the use of antimonials.

General Constitution and Age of His Majesty's Army in Bengal.

COUNTRY.	11th Light Dragoons.	16th Lancers.	13th Light Infantry.	14th Foot.	31st Ditto.	38th Ditto.	44th Ditto.	47th Ditto.	59th Ditto.	TOTAL.
English	454	377	290	751	227	420	225	213	303	3260
Irish	102	247	555	30	659	180	697	567	622	3659
Scotch	11	8	31	93	15	17	32	14	54	275
Foreigners			1	1	2				11	15
Unknown		20		47		211	208	7		493
	567	652	877	922	903	828	1162	801	990	7702
AGE.										
40 Years and upwards	35	22	15	87	12	30	29	23	53	306
35 Ditto	78	147	42	157	25	61	81	60	88	739
30 Ditto	173	270	93	276	86	130	161	140	126	1455
25 Ditto	150	119	213	210	148	126	196	267	214	1653
20 Ditto	98	67	388	148	516	174	263	164	217	2015
18 Ditto	21	6	111	41	102	91	196	144	231	943
Under	12	1	15	3	14	22	31	23	61	182
Unknown		20				194	205			419
										7712

The strength of His Majesty's forces in Bengal was, on an average, — 7976.

Chief Stations.

In Upper India..... 3006 Meerut, Burtore, and Cawnpore.

In Lower India..... 4970 Fort William, Chinsura, Berhampore, Gasepore, and Ava.

Total..... 7976

The annual proportion of Deaths in Upper India, was 1 in 30 $\frac{1}{2}$

Lower India..... 1 in 19

The Diseases in the Army at Rangoon.

“ It is observed, that on the 5th April, 1824, the 38th regiment embarked at Calcutta upwards of 1000 bayonets, and landed at Rangoon full 1000 on the 11th May following, from which they brought back 27 officers, and 462 sergeants, corporals, and privates, to Calcutta; nor will it require much medical disquisition to account for the quantum of disease and mortality that reduced them to so small a number.

“ Among the causes of disease were, the want of fresh and wholesome provisions; the want of watch-cloaks; very severe duty, particularly night duty; the very heavy rains which continued to pour down, from June for six months, without interruption.

“ In June, the epidemic fever appeared with much the same train of symptoms as at Calcutta, and was certainly the most universal, as officers suffered in like proportion to the men, and it was accompanied with a peculiar state of exhaustion, debility, swelling of the legs, &c., and was rapidly followed by dysentery, spongy gums, dropsy of the chest, abdomen, and legs, hospital gangrene, and increased debility in every case. In this state of the disease, there was a great variety of opinions as to the nature, or rather as to the name of the disease: several considered it *beri beri*, but this was soon changed for scurvy: every case either got this appellation, or was supposed to be influenced or kept up by a scorbutic taint, such as scorbutic dysentery, &c., although those who were the strongest advocates for scurvy did not think of entering it in their returns or other records, unless an odd case now and then; yet nothing else was spoken of but scurvy from the want of vegetables, &c. But what appeared strange, and confounded its advocates, was, that where fresh beef, bread, tea, sugar, milk, beer in large quantities, yams, pumpkins, lime-juice, spruce, and pickles, were issued to the sick, in as great quantities as they could use them, yet these powerful anti-scorbutics had not the least influence in the cure of this complaint, which confirmed the surgeon of the 38th regiment in the belief that the scorbutic tendency was but one of the many symptoms of the generally deteriorated state of the fluids and solids, from the above powerful exciting causes, of which the constant exposure to the influence of the climate, day and night, the being so much in wet clothes, added to the most enervating effects of want of sleep while on duty, and of its being so much interrupted while off it, with, in fact, a combination of unavoidable circumstances acting both mentally and bodily, and which the surgeon believes to have produced much the same appearances as are met with at Ceylon and Batavia at the latter end of the sickly months there, though with perhaps more virulence at Rangoon, from the additional causes, and to which water much impregnated contributed not a little to produce organic affection of the glands of the mesentery, as was observed in their dissections; and that nearly the whole of those who died of affections of the bowels had the internal coats of the intestines either ulcerated, or morbidly inflamed and thickened. These, on the whole, added more to the disease, in the opinion of the surgeon, than any want of fresh provisions possibly could do, although, in general, the sole blame was thrown on the latter, as may be seen by official documents in the offices of the Medical Boards of Calcutta and Madras, and which representations were principally the cause of the public inquiry which

afterwards took place; nor was there any evident amelioration of any consequence in the cure discovered until the change of season, and a relaxation of duty took place, after the 15th December, 1824, the last engagement which they had with them before Rangoon, when a very considerable and immediate improvement was evidently noticed in every rank and individual.

“ From what the surgeon has stated, it will be naturally inferred, that but very few indeed escaped disease in one form or other; and although the officers were better clothed, lodged, and dieted, and were not so much exposed, on night duty, to the inclemency of the weather, yet they suffered much, if it be judged from the number who obtained leave of absence on sick certificate. Scarcely one individual escaped without swelled legs. This strongly corroborates the influence of climate over military authority, and that forethought could have had but little control on events as they occurred there, in ameliorating the disease.

“ It will appear strange, that those men who suffered, as mentioned here, from the prevailing diseases as they occurred, stood the fatigues of the march much better than those who had not suffered at all, or such as had been but partially ill, and in a still less considerable proportion than the men who had joined the Rangoon army from Bengal and Madras, just before they had commenced their march.

“ The Royals and 47th, for instance, had generally from 80 to 130 or 150 sick each, while the sick of the 38th were only from 15 to 30; all the men, of course, undergoing the same hardship of carrying their own packs, sixty rounds of ball-cartridge, three days' provisions, and country blanket; and although neither of the two former corps were more than one-third stronger than the latter.

“ While they (the 38th regiment) were at Berhampore, they admitted some very severe cases of dysentery, hepatitis, and enteritis, in the two former accompanied with the most powerful arterial action, and evidently much morbid, hepatic, and intestinal secretions, as noticed in their stools; and although these were of every consistence, they were at first very gelatinous, and often of a strong shining green colour, like turtle-fat, sometimes approaching to a pitchy hue, accompanied with great constitutional derangement and local pain. The lancet, and simple doses of calomel, were administered in the most determined manner, with full and frequent doses of the pulv. jalap., camph., the infus. sennæ cum sulph. magnes., but more frequently the ol. ricini, &c.

“ *Enteritis*.—A few cases of this disease occurred, produced by the ordinary causes of inflammation, (alternations of temperature, and excessive abuse of ardent spirits.)

“ *Hepatitis Acuta*.—Recruits recently arrived from England were those principally attacked with acute inflammation of the liver. The causes were generally suppressed perspiration, or excessive drinking.

“ *Hepatitis Chronica*.—These cases were either the sequela of the acute species, or there was, from the commencement, inflammation of a sub-acute character, of which the progress was very insidious: it is stated to have been frequent among those whose constitution was weakened by previous sickness or habitual inebriety, and in whom there was not sufficient stamina remaining to excite a reaction capable of producing active inflammation.

“ In those cases which admitted of the treatment, mercury was used, to induce moderate ptyalism,

or calomel and antimony combined were used, to promote the secretions. The bowels were kept regular, or opened by the medicine in use here generally in these cases and those of splenitis, viz. a mixture with five grains of jalap, rhubarb, calomel, ginger, and supertartrate of potass, with a grain of sulphate of iron, given in peppermint-water, and repeated once or twice a day. This, with proper regimen and clothing, often effects a cure.

“ *Splenitis*.—The same causes produced these as hepatitis chronica, and most frequently it is the consequence of obstinate intermittent or tertian fever. The above mixture was the most efficacious; but mercury has been found injurious in diseases of the spleen.

“ *His Majesty's 44th Regiment*—

Admitted	1418
Discharged	1290
Died	51
Remaining	77

“ Was with the south-eastern division of the army which was sent against the Burman empire in 1824, and were employed in Arrakan.

“ The Arrakan army marched from Chittagong in January 1825, and there each corps left such individuals as from sickness or debility were unequal to the fatigues of a campaign. In their progress, a few cases of dysentery and fever appeared among the Europeans, owing to the great vicissitudes of temperature to which they were exposed.

“ On the 1st of April the capital of Arrakan was taken. The great object of the campaign being obtained, the military ardour, the great preservative of health of armies, began to subside, and from that time the sick became more numerous.

“ The capital of Arrakan is situated in 20° 35' north latitude and 93° east longitude, is distant above thirty miles from the coast, and is surrounded by hills, with very little interruption.

“ The extent of the works is ten miles: hills, and lakes, and nullahs, with low muddy banks and dense jungle, extend many miles to the westward of the capital. Through the gorges of these hills, chilling gusts of wind, rushing down on the cantonments at the period of the termination of the rains, were among the causes of intermittents and remittents among the troops.

“ The Burmese were well aware of the unhealthiness of the town of Arrakan, and studiously avoided it in the rains, during the commencement of which, cattle, horses, elephants, and poultry, died about Arrakan.

“ It is said to rain in Arrakan for six months in the year.

“ Few of the inhabitants, it is observed, attain a very great age. The prevailing diseases are, scrofula, dysentery, fever, cutaneous affections, and cholera.

“ The commencement and the termination of the rains influenced the sickness, not the hot season.

“ Arrakan resembles Dr. Lind's description of Guinea; and the fate of the British troops on the Senegal was similar to that of those in Arrakan.

“ After the termination of the rains, the atmosphere is damp and raw: there is great depression of temperature during the night. The cutaneous secretions are suppressed, and the internal organs

become oppressed with a consequent load of fluids. At this period of considerable diurnal vicissitudes of atmosphere and concentrated exhalations prevailing, it is that sickness and mortality increase among the troops.

“ The natives of Arrakan take care to have their tenements elevated as considerably as they can afford above the surface of the earth. This was not sufficiently attended to in the construction of the accommodations for the troops.

“ The hospital for European troops was a native building, but the ground underneath was not properly attended to. Under it were mire and filth of every description, and it was the constant resort of pariah dogs and tattoos (country ponies), to the great annoyance of the patients; whereas, had the ground underneath been properly cleaned and drained, recoveries might have been more rapid, and sudden deaths less frequent; for, it would appear, it was supposed that in some individuals reduced by disease, death was induced by the direct influence of an impure and noxious atmosphere.

“ The country afforded few of the necessaries, and none of the comforts, of life. Under these depressing circumstances, the army gradually became a prey to the insidious influence of an unwholesome climate.

“ It was not, however, till the commencement of the rains that sickness became general, and disease assumed that fatal and intractable form which characterised it at that period.

“ Previously to the month of May, dysentery had been more frequent than fever among His Majesty's European regiments; but from this time the reverse was the case, and towards the end of that month, fevers were almost the only cases which presented themselves.

“ The thermometer then was 93 daily, with light airs and cloudy sky; and, surrounded as Arrakan is with hills, the weather was hot and oppressive.

“ Several of the Europeans were attacked by cholera, of which the natives were dying in numbers; but the form of disease among His Majesty's troops was a fever, generally of a bilious continued or remittent type, and requiring the use of the lancet and antiphlogistic regimen.

“ It was found, that with the commencement of the rains in June, the febrile symptoms lost much of their inflammatory nature; and that though the disease possessed the general characteristic of intermittent or remittent fevers, the symptoms were often so undeveloped, or marked by such sudden transitions, as not to come under any of the designations usually given in these descriptions of fever. Such was the case in His Majesty's 44th regiment in July also, and the same anomalous type of fever continued during the rains.

“ The general symptoms of disease were, great prostration of strength; headach; pains in the back, loins, and extremities; a quick pulse; heat of skin, with occasional chills; thirst; want of appetite; a foul tongue; nausea; irritability of stomach; constipated bowels; urine scanty and high coloured; pains in the chest, attended with oppressed and difficult breathing; a sense of weight about the præcordia, with pains in the hypochondriac regions; eyes dull and heavy, countenance dejected, and the whole features expressive of that anxiety and despondency which were invariably attendants on the disease. Such were the general symptoms; but it may be expedient to mention also the peculiarities and modifications which they exhibited in particular cases and at different periods.

“ The debility so much complained of was more apparent than real, and arose from the great

irregularity of the circulation, depending more immediately on the loaded state of the vessels of the liver and spleen. The pains in the head were of a dull and obtuse nature, and not confined to any particular part, (as to the orbits, in the Bulam fever,) but alternating occasionally either with a sense of lightness in the head, or of weight about the nape of the neck.

“ The pains in the back, loins, and extremities; were also invariable and distressing symptoms, especially in those whose fever partook of the remittent form, or who had (to use their own expression) the dead ague; and that those pains arose also from great irregularity in the circulation and visceral congestion, there can be no doubt, from the great temporary, if not permanent, relief in general afforded by the extraction of blood, the application of a blister, or the exhibition of a purgative. The pulse ranged in general between 80 and 100, and was for the most part quick and rather wiry, but sometimes slow, oppressed, and contracted.

“ On the fall of Arrakan, the capital, two detachments were ordered off, the one to Ramree and the other to Talâk. In the former were eight companies of Europeans, and in the latter two; both were supplied from the same source, and with the same kind of provisions. To Ramree and Sandooway they proceeded by sea, and for six weeks enjoyed a pleasant cruise after the fatigues of the campaign. During that time they had two deaths, one in His Majesty’s 44th, from fever; and the other in His Majesty’s 54th, from dysentery, to which the individual had been subject, and for which he had been taken from the hospital, in expectation that the change of air might be beneficial; with these exceptions, they returned in good health.

“ The other party proceeded to Talâk by an inland navigation, and from that place made several fatiguing marches through a moist and jungly country, after the rains had partially set in. In consequence of this, few escaped disease, and in many it proved fatal. Those who recovered, gained strength but slowly, and were very subject to relapse; whereas, in the Ramree detachment, it was observed, that the individuals who composed it resisted, on their return to Arrakan, the influences of the climate much better than those who had remained behind; and in one of the companies, so late as the month of August, none had died.

“ Nor is it foreign to the subject to mention, that the detachment of Europeans and Sepoys stationed at Sandooway retained their health in the rains.

“ But to what, it has frequently been asked, was the greater sickness and mortality of His Majesty’s 54th to be attributed, compared with the state of His Majesty’s 44th regiment, and the Honourable Company’s detachment of artillery? Not, it is suspected, to any local or immediate cause, but to sources more general and remote. The regiment, soon after its arrival from the Cape, was stationed at Bangalore, which, being nearly 3000 feet above the level of the sea, is one of the most healthy stations in India, and remarkable for the purity and wholesomeness of its atmosphere. But, on the declaration of war, it was ordered to Madras; and on the march, which was during a very hot season, many died of the cholera. In September, the corps embarked, leaving Madras, scorched and burnt up by the drought and heat of the season, to encamp in the raw, damp, and jungly district of Chittagong, where the rains yet continued to fall, and ground could scarcely be found on which to pitch their tents: sickness, of course, succeeded, and there were soon upwards of 100 men in hospital; and on leaving Chittagong in January, at least half that number was left behind in the field hospital.

“ It may, moreover, be worthy of remark, that in Arrakan, after the 44th had entered its lines, the 54th continued in low, damp, and confined huts, from which, about the end of that month, there were admitted sometimes ten or fifteen into the hospital daily.

“ It is, therefore, to the peculiar circumstances in which the 54th had been previously situated, and to the influence which these had in disturbing the equilibrium of the system, in vitiating the secretions, and in inducing diseased actions in the system, that the more early and general sickness of that corps in Arrakan is to be attributed.

“ It was remarked by Hippocrates, that disease is not the production of a moment, but that, advancing by slow degrees, it often terminated in a sudden and fatal explosion. The observation was strikingly verified in the fate of the Arrakan army, and particularly in the case of His Majesty’s 54th regiment.

“ In the nature and vicissitudes of the weather there were other exciting causes of disease. Previous to the commencement of the rains, sickness was chiefly to be ascribed to the great diurnal changes of temperature to which the troops were exposed in June, July, and August. Again, the rains were so constant, that there was no moving out but at the risk of being drenched; and from the limited supplies of clothing, the soldier could seldom afford a change. It therefore followed, that from such exposure many dated the commencement of their illness.

“ But the greater number were seized in the night with pains, accompanied by nausea or vomiting, and great prostration of strength. This arose from their going to sleep either overheated, or without clothing sufficient to protect them against the decreasing temperature of the night, which was always considerable, and, from the open construction of the lines and the moisture of the atmosphere, made a powerful impression on the body. They were, moreover, in the night, sleeping in their low *machauts*, more liable to the noxious exhalations from the surface of the earth. From these sources, they have awoke very frequently with a general uneasy sensation, accompanied with nausea, and with their limbs so cold and stiff, as not to be moved, for a considerable time, without producing pain. To prevent this, recourse was had by the officers to a close flannel dress, which they could not divest themselves of when hot and asleep in the early part of the night; and to this precaution, and their sleeping always on a well-elevated bed, may be attributed, in a great measure, their exemption from disease in Arrakan. Of the advantages of these precautions, several officers were sensible.*

“ *Treatment adopted in the Arrakan Fever.*

“ In the month of May, before the rains had set in, the disease, whether appearing under the form of a bilious continued, remittent, or intermittent fever, was evidently of an inflammatory nature, and the lancet was had recourse to in almost every case. After its use, calomel and the compound powder of jalap were next exhibited as purgatives, and these were followed up by pills, consisting of equal parts of compound extract. colocynth. and blue-pill, in number from two to six, at intervals in the

* The circumstance of these flannel dresses having been found useful to the officers, points out the propriety of resorting to similar arrangements for the men, whilst on field-service in an unhealthy climate, especially during the rainy and cold seasons. The fact so fully and correctly stated by Dr. Burke, has been frequently proved to our own observation during active service in India, and is one most deserving the marked attention of the authorities.—J. A.

course of the day; and when any other medicine was required to keep the bowels open, salts and senna, or salts with a little emetic tartar, were given. If great irritability of stomach was present, glysters were substituted.

“ In other cases, where there was inclination to nausea, a few doses of ipecacuanha were given, each consisting of three or four grains, and at intervals of half an hour. These generally produced one or two free evacuations from the stomach, and at the same time operated freely on the intestines: given before a febrile paroxysm, they sometimes checked, and often rendered it less severe.

“ To keep down any disposition to inflammatory action in the head, chest, or abdomen, leeches and blisters were had recourse to.

“ When, from the reduced state of the system and the continuance of the febrile symptoms, much debility existed, camphor mixture, the compound tincture of gentian, and the compound spirit of ammonia, were used in various forms. Anodyne and antispasmodic draughts were also occasionally used to procure sleep or check the febrile paroxysm, as also the arsenical solution in some cases.

“ In nine sick officers, six, who were bled as above, recovered; two, who were not bled, and had taken bark, were ill eight months after; and one, who *would not* be bled, died comatose on the 13th day of his illness.

“ In July, in the hospital of the 44th regiment, the disease was of a less inflammatory nature than before the rains, and the febrile symptoms were irregular and anomalous: no means were so efficient as the lancet in removing those congestions of the viscera which were such prominent symptoms in the disease. This practice was continued, though not so generally, nor to the same extent, as before: leeches were, therefore, occasionally substituted, and frequent blisters to the back or the nape of the neck, in conjunction with the other remedial means already mentioned.

“ In many instances, the irritability of the system was so entirely overcome, that the individuals, though evidently labouring under great visceral disease, complained of nothing but debility and general uneasiness; and the febrile exacerbations were only to be detected in the alternate chills and heats which succeeded each other. In such cases, the occasional use of the lancet, but especially of purgatives and blisters, were often of striking advantage, in so relieving the loaded and oppressed state of the system, and in particular the congestion of the liver and spleen, as to enable nature to put forth her remaining strength, and to display her exertions in the evolution of the more usual phenomena attending such diseases; and then it often happened that the patient, for the first time, became sensible of his real state, and complained of pain in particular situations, which before had escaped his notice. But in too many instances, disease had made such advances, and the powers of life were so exhausted, that nature could not be rallied by such means; and in some of these cases, where the lancet was had recourse to as a dernier resort, it seemed rather to have hastened a fatal termination.

“ In Arrakan and Chittagong, the general use of mercury had been followed by extensive ulceration of the mouth, and the patients ultimately sunk.

“ In bark there was no faith to be placed in the cure of Arrakan fever. In a few individuals it appeared to check the febrile symptoms; but these in general soon returned with increased violence,

and often with more evident symptoms of visceral disease. It would appear, that those whose cure was attempted by bark, have recovered more slowly, and been more subject to relapse, than those treated entirely on the antiphlogistic plan. Two individuals, who left Arrakan in July, and who afterwards took very considerable quantities of bark and sulphate of quinine, were found on the Ganges eight months after, subject to occasional returns of their fever.

“ The sulphate of quinine, however, will no doubt be a useful remedy in the cure of idiopathic, intermittent, and remittent fevers, if such there be; and even in those where there is extensive visceral disease, it will be of service, by procuring a truce with the fever until the obstructions on which it depends can be removed.

“ In conclusion, bark, wine, and opium, were in general pernicious drugs in this disease.

“ *Intermittent and Remittent Fevers.*

“ Viewing these as they occurred in the soldiers of the 44th regiment, as merely different forms of the same fever, because they prevailed at the same time and place, indifferently affected the same subjects, and alike induced similar functional and structural derangements, the surgeon has ventured to class them together.

“ In many instances, the first invasion was in the form of remittent, while the relapses assumed the type of intermittent fever: the converse of this occasionally occurred, and even the different relapses in the same subject varied in the same irregular manner.

“ The relapses, however, in the shape of remittents, occurred only during the first six months after the return of the regiment, and were fewer in proportion during the latter months of that period.

“ It is remarkable, that among such curious cases of intermittent fevers, few were observed to maintain a short regularity of type. The tertian was, indeed, the more common form, but subject to constant variations.

“ Many, after a few tertian paroxysms, became subject to daily attacks, which again changed to distant and irregular periods.

“ Even in such as had the tertian in its most regular form, there was usually postponement or anticipation of the paroxysm, with dissimilarity of the paroxysms to each other as to intensity and variety of symptoms, and continuance of the successive stages.

“ The duration of the paroxysm varied from two to twenty hours, the cold stage sometimes lasting only a few minutes, at other times occupying more than half the period of the whole attack.

“ The paroxysms have seldom been marked by great intensity of any particular symptom. Delirium was very uncommon; and vomiting, the most usual attendant on the cold stage, was not often very severe. Arterial action was seldom immoderate.

“ Aggravation of local pains, increased thirst, and the general anxiety and restlessness of the pyrexial state, with a very distressing sensation of distension, from the rapid generation of gaseous fluids in the stomach and bowels, were the more common symptoms.

“ But notwithstanding the apparent mildness of these paroxysms, they were generally followed by permanent aggravation of the local diseases with which they were now combined, with great derangement of the gastric functions, irregular action of the intestinal canal, and general debility.

“ The cases of *cholera morbus* have not been exactly of that description so fatally known in India ; they have, in fact, come nearer to Cullen’s definition, and resembled those taking place in the autumnal months in England.

“ The three fatal cases occurred in patients, already worn down by long previous suffering from other complaints, and death in two of them appeared as the immediate result of immoderate intoxication : they were all brought to the hospital in a moribund state.

“ In the treatment of cholera, such as it is above described, the lancet has sometimes been employed when the state of the pulse offered any probability of its being useful ; but the mercurial purgatives, with ether, opium, warm fomentations, the warm bath, and stimulating frictions of the extremities, were the remedies used in the successful cases.”

APPENDIX, No. II.

EXTRACTS from Reports and Official Correspondence, on the subject of prevailing Diseases in various Parts of India; chiefly taken from the Records at the India House.

Extract from Mr. Heward's Report to the Medical Board, Madras; dated Rangoon, 29th of September, 1824.

“ IN the month of June, fever, of an epidemic and ardent character, made its appearance among the troops, which continued to prevail during the whole month of July; and such was its universality, that neither the European, native soldier, nor even officer, were known, I believe, to escape its influence; leaving the patient, for the most part, under circumstances of extreme exhaustion and weakness, not to be readily regained upon salt provisions.

“ This fever, however, was not of fatal result, and its attacks and subsequent symptoms were met with great success by the prompt and judicious practice adopted by the medical officers of the division.

“ It will not be necessary in this place to remark upon either the nature or extent of the duties to which the troops have been subject, nor upon their privations in diet since their arrival at Rangoon, though to these conjunct circumstances, rather than to any peculiarity of climate, may be traced that particular state and condition of constitution which is now unhappily found to exist, more especially in the European soldier, and to render him so obnoxious to the ravages of disease.

“ Some cases of fever continued occasionally to appear among both the European and native troops during the month of August, and some sporadic cases of the disease are still seen in the hospitals; but these are few in number, and, for the most part, unimportant in themselves, and the disorder would appear to have nearly run its course. But the disease which is now found generally to afflict the European soldier, and with such fatal visitation, is dysentery, combined with a scorbutic taint of constitution.

“ The disease does not appear to possess any other striking peculiarity in its character but the extreme fatality which attends it, and which may reasonably be accounted for from the combination with scurvy, aggravated, no doubt, by the previously debilitated and exhausted constitutions of its victims.

“ When the patient does not sink suddenly under the disease, he falls into a dropsical state; the swelling generally commencing in the feet, extends upwards; the belly becomes tumid, respiration laborious, deglutition painful, the countenance bloated, and his sufferings continue to increase until death closes the scene.*

“ Ulcers, too, have become numerous in the hospitals, and, by comparison, it will be seen greatly more so in the native than in the European soldier; the smallest scratch or abrasion of the skin degenerating into ulcer; and a few cases among the sepoys have assumed that particular character of sore which has been denominated the ‘ hospital ulcer,’ and has been considered, at times, highly infectious; but as yet nothing has appeared among the troops of the Madras division which can lead to the belief that the ulcer has assumed this infectious character.”

Letter from the Medical Board, Calcutta, on the Endemic of Arrakan, and its Prevention and Cure, addressed to Superintending-Surgeon Grant.

“ SIR,—I am directed by the Medical Board to acknowledge the receipt of your letter of the 14th July, together with its accompanying documents, from the medical staff of your division, relative to the prevailing sickness in camp. The causes assigned by yourself and your professional brethren in charge of the sick are perfectly satisfactory to the Board, and are such as might be expected to give rise, in an aggravated form, to the diseases generally prevailing at the present season. The subject has occupied the anxious attention of the Board, and, in their communication with the Adjutant-General of the Army, they have already suggested, for the consideration of his Excellency the Commander-in-Chief, that every precautionary and remedial measure should be adopted without delay; and at the same time pointed out such general means as in their judgment were best suited to the exigency. There remain, however, some questions more purely medical, to which they would request your attention, and through you, that of the medical officers serving with the division.

“ The prevailing malady among the troops appears to be fever, partaking more of an intermittent form than is usually observed at the present season of the year. The suddenness, however, with which it is represented to change its character, and the frequently unexpected fatality that ensues, would clearly point out its nature to differ materially from the epidemics of Bengal and Upper Hindoostan which generally come under the treatment of the military practitioner.

“ From the information before the Board, the disease might be deemed a mixed remittent and intermittent, resembling very closely the variety of fever which prevails on board ships lying at the entrance of this river. The analogy of the case would render it probable that similar causes to those existing in that situation have been concerned in producing it, while, at the same time, the

* This form of disease appears nearly to resemble the beri beri, if not to constitute it. — J. A.

medical observer cannot avoid drawing his inferences as to the resemblance of the symptoms, and the treatment indicated accordingly. Under this view of the subject, it would be desirable, in the opinion of the Board, to give a more extensive trial to the use of the bark than appears to have hitherto been done. While the tongue remains moist, no harm can possibly arise from its exhibition to any extent, provided the gastric irritability be not very great, in which case the combination with opium might ensure its retention in the stomach, and eventually promote its success. The employment of opium by itself, or joined to aromatics and diaphoretics, is also deserving of the fullest consideration in the treatment of such cases. And the Board would especially insist on the propriety of always having recourse to it after the bowels have been opened, and where no opposing symptoms exist. The state of the spleen ought to be particularly looked to, and such remedies as are adapted to check its enlargement early employed.

“ Unless at the very commencement of the disorder, blood-letting, as a general remedy, seems of doubtful application; nor would the Board feel disposed to recommend depletion by purgatives, beyond the mere emptying daily the intestinal canal of its contents. Of course these observations are not intended to apply to every case; the particular management of the disease must be left to the medical officers on the spot, on whose professional judgment, aided by your own experience, they place the utmost reliance. The Board would strongly urge the necessity of administering wine to the sick of the native troops, mixed up as a medicine with sago and arrow-root. The prejudices of the sepoys seldom or never stand in the way of the medical officers' intentions, where even an ordinary degree of discretion and knowledge of the native character is displayed; and in the present instance of dismay from the ravages already committed by the disease, there is every probability that they will cheerfully acquiesce in any suggestion that may be proposed to them.

“ The Board would particularly call your attention to the state of the hospital buildings, which they are surprised to find, from the reports of your medical officers in charge, are now in so insufficient a state. Every representation on your part ought to be made to the local authorities on the necessity of repairing these, and erecting others on more favourable sites. The bildars belonging to each corps, as directed by the regulations, should be in constant attendance on the hospitals, clearing away the grass, jungle, and keeping the adjoining grounds free from filth and nuisances of every description. The Board do not consider it necessary to particularise what may come under this denomination; but they cannot pass over the alleged noisome condition of the floors of the hospital, and the space between these and the ground, which is represented to abound with every kind of offensive effluvia; and from the dampness described alone, must evidently contribute more than any other circumstance to keeping up disease, and preventing the wretched inmates of the sick ward from ever regaining a state approaching to health. The mats of the floor should be removed, if necessary, weekly, and fresh ones supplied in their place; a particular establishment for cleaning the foundation of the buildings should be entertained, and fires ought to be placed morning and evening in such a situation as to occasion a thorough draught of air within the piles on which these are erected. The inside of the wards ought also to be fumigated occasionally; and no better means for that purpose, perhaps, can be employed than common wood smoke. In their communications to the Adjutant-General of the Army, the Board have already expressed their

sentiments regarding the necessity of supplying the troops with atta,* &c. and proper clothing; and they would here merely add, that they look to you, as the superior medical authority on the spot, for suggesting to the officer commanding the division whatever other means you may deem requisite for preserving the health of the troops, and following up the ideas entertained by the Board on the subject.

“Fort William, 15th August, 1825.”

(Signed)

“J. ADAM.”

Extract from the last Half-yearly Report of 1820, from Mr. Assistant-Surgeon Bell, Civil Department, Dooab, respecting Fever and the Cause of its Prevalence amongst the Native Prisoners at Dharwar.

“THAT the diseases of the convicts at Dharwar† had not their origin in any general cause, is proved by there having been no corresponding unhealthiness and mortality in the neighbourhood, while the cases most frequent and fatal in the gaol did not exist to any extent, if at all, in any other part of the district.

“The situation of the Dharwar gaol is low, and in the vicinity of a swamp, which, though perhaps of little consequence during the rains, becomes, in my opinion, a very serious cause of disease when they have ceased.

“The buildings composing the gaol were, during the last monsoon, by no means calculated to protect the convicts from the incessant rains of this part of the country; while they, being employed in out-door work, got their single cumbly wet during the day, which was not likely to afford them much comfort on a damp floor at night.

“Besides the condition of the gaol, there was a cause which, in my opinion, produced much of the bad fever which prevailed during the monsoon. The only completely enclosed part of the gaol consists of a large room, 49 feet long by 18 broad, ventilated by one or two small holes in the roof, and a small door. Into this apartment the prisoners used to crowd for the comforts of a warm lodging, to the number of a hundred or a hundred and ten, and it was from it that all the worst cases of typhus were brought.

“These, then, in my opinion, gave rise to the sickness of the past half-year; while the state of the hospital, the floor of which was never dry during the rains, rendered insignificant diseases most serious in their consequences, and produced the disposition which existed in all diseases to run into others. Though not the season during which the intermittent fever prevails to its greatest extent, still there was less of it in the gaol than we may expect at every season, in an equal number of sick in this part of the country, while the cases of intermittent that did occur had a constant tendency to assume the continued form, frequently terminating fatally.

* Wheat flour.

† These are not sepoys, but common people of the country.

The cases recorded shew this disposition of one disease to terminate in another, and the peculiar tendency of all diseases to terminate in a diarrhœa in which the patient had a constant watery purging; and after passing, for eight or ten days, nothing but water and indigested food, he died, as if from atrophica. The tone of the intestines seemed completely gone, and often neither astringents nor stimulants had the slightest effect on them, even when relieved: once or twice the patient sunk under repeated attacks. The first cases occurred during the monsoon, and were generally those who had lost their health from severe attacks of other diseases; and as almost every convict had been in hospital at least once during August and September, of course the gaol was in a most sickly state when the rains ceased.

“The inhabitants of the country have been, during the last half-year, by no means unhealthy. There has been less fever than usual: they have been entirely free from the epidemic cholera, and there has been very little small-pox.”

Abstract of Cases of Fever and Bowel Complaint, occurring in the Civil Department at Dharwar, from June 1820 to March 1821.

MONTHS.	Fever.		Dysentery.		Diarrhœa.		Total.	
	<i>Admitted.</i>	<i>Dead.</i>	<i>Admitted.</i>	<i>Dead.</i>	<i>Admitted.</i>	<i>Dead.</i>	<i>Admitted.</i>	<i>Dead.</i>
June 1820	27	—	1	—	6	—	34	2
July	19	4	1	—	6	1	26	5
August	96	13	2	—	7	4	105	17
September	150	20	6	2	13	3	169	25
October	37	9	7	4	28	12	72	25
November	25	3	4	1	13	7	42	11
December	12	—	3	—	2	—	17	—
January 1821 . . .	25	—	5	1	6	—	36	1
February	31	3	5	—	7	—	43	3
March	13	—	1	—	1	—	15	—
Total	295	52	35	8	89	27	559	89

Deaths of fever is 1 in 5; ditto of dysentery, 1 in 4; ditto of chronic diarrhœa, 1 in 3, for a period of ten months, from June 1820 to March 1821.

This paper shews how much the native constitutions require support in disease, and how soon they sink when it is neglected. This may be taken as a general rule. Disease is easily checked and subdued in natives, if treated with decision at its commencement; but if neglected even for a day or two, the powers of life sink, the disease assumes a malignant form, and either death or disqualification for service is the consequence.

Extracts of a Letter from Mr. M'Dowell, Superintending Surgeon, Berhampore, dated 19th February, 1823, to J. Crawford, Esq., Secretary to the Medical Board, Calcutta.

" I HAVE the honour to transmit to you the monthly returns of the European and native corps at Berhampore and the out-stations and posts dependent on the Presidency Division, for the month of January, 1823.

" From the strength of some of the corps not having been stated, I am unable to give the total strength.

" *State of the Sick.*—The volunteers for His Majesty's 13th regiment lost five men during the month. One died of cholera morbus : he came into hospital on the 20th January, with purging and griping. On the 25th he was considered to be in a convalescent state, with a good appetite. About eleven at night he was attacked with griping and a constant inclination to go to stool ; had a great many watery motions. After sitting too long on the close-stool, he became very cold, with spasms ; skin covered with cold sweat, with a purple-tinged countenance ; he took some hot brandy and water, and was put into the hot bath, from which he appeared to experience some relief. Soon afterwards he passed his stools involuntarily, his pulse became feeble, and he complained of a pain in his lumbar region. He died eighteen hours from the commencement of the attack.

" *Dissection.*—*Head.* The contents healthy.—*Thorax.* Lungs studded with tubercles.—*Abdomen.* Peritoneum extremely transparent ; vessels in the omentum larger than usual. The liver presented two different conditions of disease ; the right lobe of a dark, slimy appearance, softer in its texture than natural ; the left lobe had more the aspect of being a part of the lungs than the liver : the gall-bladder was of natural appearance, and full of bile. The stomach exhibited extreme marks of inflammation, and fragments of indigested matter were found in its cavity. The small intestines inflamed ; the large intestines very much constricted ; bladder empty ; kidneys healthy.

" Another of the men, *Fletcher*, aged 33, was admitted into the hospital on the 1st of the month, with purging and straining, and died on the 17th.

" *Dissection.*—*Abdomen.* The liver much enlarged ; abscess in the lower edge, which contained upwards of a quart of purulent matter.

" *Thomas Deacon*, aged 28, with dysentery : admitted on the 4th January, with severe pain in the lower part of the abdomen ; frequent motions, which are chiefly blood. Died on the 13th.

" *Dissection.*—*Abdomen.* The liver much enlarged ; had more the appearance of being boiled than otherwise. The intestines diseased in many places ; the coats gave way to the touch of the fingers. Kidneys healthy.

" *James Bradley*, aged 22, admitted into the hospital on the 21st November, with fever. Considered in a convalescent state on the 25th, with good appetite. On the 26th he complained much of a pain in his temples and forehead. Suckers were applied, and his bowels opened with a purgative mixture. On the 28th December he was again free from all complaints, with a good appetite. On the 17th January he appeared to suffer from pressure on the brain, with dilated pupils of both eyes ; very restless ; pulse slow. Blisters were applied, and purgative medicines given, which

were rejected by vomiting; jalap was given in pills, which operated; pulse 84.—10th. Paralysis of the left side; pupils very much dilated; pulse 54, regular; appetite good. On the 17th he was much better, and rested well. On the 21st he vomited some extremely offensive fluid; pupils much contracted; pulse feeble. Died at 2 P.M.

“ *Dissection*.—The vessels of the brain appeared turgid, the brain firmer in its texture than usual; four ounces of fluid were found in the lateral ventricles. — *Abdomen*. The liver larger than usual, of a much softer consistence; the gall-bladder large, and distended with bile; spleen uncommonly small, and only weighed three ounces; the sigmoid flexure of the intestines much contracted; the bladder was much thickened in its coats, and had marks of inflammation.

“ The fifth case was admitted into the hospital on the 20th November, with intermittent fever: pulse small and frequent, with a slight cough. On the 10th January he was considered in a convalescent state. On the 11th, at 3 P.M., he was seized with spitting of blood, and died at half-past five o'clock on the following evening.

“ *Dissection*.—*Head*. The brain of a softer consistence than natural, with several ounces of serum in the ventricles. *Thorax* contained nearly a pint of serum in each side; lungs diseased; heart sound; eight ounces of fluid in the pericardium.—*Abdomen*. Liver enlarged, and of a dark slate-colour; stomach contracted, and much thickened at the pyloric orifice.

“ The left wing of the 2d battalion of the 13th regiment, at Dacca, lost ten men. Forty-five cases of fever remained on the 1st January: 32 were admitted during the month, and 9 died. Mr. Surgeon Brown, in medical charge, states: ‘These casualties chiefly originate from so many men having sustained repeated attacks of fever during the latter end of the rains and commencement of the cold weather, which produce great debility, often hardened and swelled spleen, and generally ending in dysentery.’ One man died under the head ulcers.”

With the exception of mortality from fever and dysentery, in the Moorshedabad provincial battalion, fifteen died, and one man under the head of rheumatism, of which the chief explanation is, that the greater number were recruits; and the chief causes were, the want of nourishing diet, warm clothing, beds, or any kind of covering, except a thin gudge cloth. No remark is necessary.

A Letter to J. Adam, Esq., Secretary to the Medical Board, Calcutta, from Superintending-Surgeon Robinson, Esq., respecting a Rheumatic Fever, epidemic in some Districts in India.

“ SIR,—I have the honour to forward the papers for the month of July. These returns perhaps exhibit a fewer number of fatal cases than might have been expected, when the extraordinary and extensive sickness which has visited this division is considered.

“ Within the last six weeks or more, an epidemic fever of a rheumatic form has prevailed generally, from Buxar to Benares, Chunar, and Merzapore; at which places, as well as this station,

hardly a person of any age or sex, either Europeans or natives, have escaped : it has generally commenced with a severe pain in the loins and small of the back, pains in the wrists and knees, drowsiness, and headach. It has seldom continued beyond four days, but it is followed universally by a very great prostration of strength. It usually gives way to purgatives and emetics frequently repeated ; and warm bathing has, in a great variety of instances, been of very decided benefit. In many cases, the cause appears to have been a very great accumulation of bile ; in several, the head has been much affected, and copious and early bleeding in those of full habits, has been attended with the best effects. It first commenced at Buxar, and has been generally coming on to all the stations on the banks of the river. This fever appears to confine itself almost entirely to the course of the river, as I do not hear that those of the large towns or villages inland have suffered at all more than usual, but think those who live on the banks of the river have been the first who have become sick. Numbers of the soldiers of the European regiment at this station have been attacked, and from 15 to 25 are daily coming into hospital, and I imagine the whole regiment will feel its influence. In the city of Benares and Merzapore the sickness has been prodigious, and the mortality very great ; in cases where a relapse has occurred, dysentery and cholera have terminated the patient's existence.

“ One of the fatal cases, this last month, in the European regiment, was a soldier brought in nearly dead from intoxication. Amongst the invalids, these were chiefly men of advanced age and worn-out constitution.”

“ 29th August, 1825 ”

Extracts from a Report made by Dr. Strachan, Inspector of His Majesty's Hospital, Bombay, to the Army Medical Board. (Dated Bombay, 21st December, 1826.)

“ THE Queen's Royals (strength 779) had landed from England in the month of June of the preceding year, and were placed in barracks on the island of Calabah,* where they soon suffered severely from fever and dysentery, which, by the month of December, carried off about 80 men, leaving in many of the survivors deeply rooted visceral disease.

“ This island, which is separated from that of Bombay only at flood-tide, is about two and a half miles in length, by four hundred yards in average breadth ; and, from its small elevation, is considerably encroached upon by the sea in the time of the monsoon ; being, however, a rock, basaltic, and covered chiefly with sand, without any depth of vegetable mould, I cannot consider it inherently unhealthy, this quality seeming to be rather external to it, depending on cold damps during the monsoon, when *only* it is unhealthy. The natural consequence of the exposure of its situation, to which the thoughtlessness of soldiers may be expected not a little to contribute.

* The troops at Calabah are supplied with water from Bombay.

“The elements of this corps are of very young materials; and landing, as it did, at the commencement of the monsoon, after a four months’ confinement on ship-board, exposed to change of diet and of clothing, destitute of bedding, and without experience, its sickness at the time and subsequently, however much it may occasion regret, cannot excite surprise.

“The 6th regiment (strength 520) arrived much about the same time from the Cape of Good Hope; its circumstances, as regards the nature of its composition, altogether opposite, but equally remote from health and efficiency; it was, in fact, almost a veteran corps; many of the men, as reported by the surgeon, having been twenty years in the service; few of them under fourteen years, and having, besides, been exposed to the climates of the four quarters of the globe.

“The surgeon also states, that when at the Cape, they had even unusual facility of inebriety, in which they indulged; thereby, in his opinion, rendered particularly obnoxious to the diseases of India.

“On landing, it was quartered on the island of Bombay, in Fort George barracks, where it, notwithstanding, suffered from the diseases of the country; but these were greatly multiplied and aggravated by its having been, in the fall of the year, sent to Cutch, where the causes of disease prevailed in even an increased degree, aided by a variable temperature, 40° between mid-day and midnight, and which were not obviated by comfortable accommodation, their tents being of single canvass and small, and of consequence ill ventilated. The effect was, very general fever and dysentery, with which the regiment continues to be afflicted.

“The 20th (strength 750) were brought from St. Helena, where it had served for several years, about four years ago. In the first six months it lost nearly 80 men; rather surprising, as they were neither raw recruits nor could be considered unseasoned, as far as temperature, at least, is concerned. They are, however, at present the most efficient corps by far in the command; the men lathy and active, and of a good time of life. The left wing had but lately joined the head-quarters from Kalapore, about two hundred miles to the southward, where it had been for some months in the field, and where it had lost from 20 to 25 men.

“The station of this regiment, as well as that of the Queen’s, which, about Christmas 1825, had been removed from Calabah, was at Poonah in the Deccan.

“The monsoon set in at Bombay on the 29th May; the weather immediately preceding having been excessively hot, with thunder and lightning the most tremendous I ever witnessed, followed by sheets of water; the peals, too, were the most varied in sound and in duration, graduating from a sharp report of a musket fired directly over one’s head, to the roaring of many thousands of pieces of heavy ordnance.

“This is the season which, together with about a month immediately subsequent, is regarded as the most unhealthy. In various districts, depending considerably, I believe, on elevation, the monsoon sets in at rather different times; in Guzerat it appears to have set in in June; in the Deccan it could scarcely be said to have commenced seriously before July, notwithstanding there were a few showers more early.

“The cholera, from which the 4th dragoons had so suffered, ceased soon afterwards, when they had a short respite from severe disease, the month of July having passed without a casualty.

“The 6th regiment now suffered much from dysentery and visceral disease, about 200 cases

having been treated in the course of the quarter: the surgeon died of hepatitis and dysentery on the 4th of August.

“Fever prevailed to a considerable extent amongst the corps in the Deccan, in the Queen’s more especially, and was conjoined with visceral disease and dysentery,—a hundred and ninety-one cases having been treated.

“Various measures were adopted with a view to the preservation of the health of the troops throughout the command: a supper mess at seven o’clock was established, warm coffee was given in the morning to the soldier before going out, a convalescent mess was established in the corps, the subject of their bedding was investigated and reported on, and medical officers were authorised to order flannel shirts for such patients as, on dismissal from hospital, would be thereby benefited.

“The prevalence and fatality of fever, although falling far short of the opinion entertained of it by Sydenham, is, notwithstanding, the most general and the most mortal of diseases.

“The 4th dragoons had suffered more or less from fever from the commencement of the year, but it was not until after the middle of the monsoon, and the temporary cessation to the fall of rain in August, when it became so general; doubtless increased by accidental causes, of which the principal was ebriety,—an inference suggested by the circumstance of the officers, women, and children, having suffered less than the common soldier, and also by the converse, disease having fallen heaviest amongst those known by the designation of ‘hard goers,’ as farriers and such like, who have most money to spend.

“To such an extent, indeed, does the drinking of ardent spirits appear to have been carried, that the commanding officer attributed similar visitations in former years exclusively to this cause; but this was abundantly negatived, indeed, by officers having also not a little suffered.

“Owing, in all probability, to the heaviness of the monsoon, and to the temporary cessation of the rains, the endemic has been more general than since the years 1813 and 1814, when the 17th dragoons so severely suffered. Not only the native regiments, but the natives of the district, have been very generally affected; and had it not been that the sick and convalescent of the 4th dragoons were so promptly transported from the scene of disease to the comforts of the Presidency, it is to be apprehended that their loss, great as it was, would have been still more considerable.

“The numerous cases of visceral disease and of dysentery treated, have been already adverted to. They are, as it is well known, very much the sequel of the class of fever just noticed; and although, as an axiom, the prevention of disease is always to be preferred to its cure, yet it nowhere admits of more general application; for, once seriously affected with dysentery, the individual is seldom perfectly restored to health between the tropics.

“The cases of rheumatism (439) are also numerous, and, most probably, depend on several causes, the influence of all greatly increased by the natural carelessness of soldiers, and the desire to cool themselves, when suffering from the heat, at any risk.

“This climate is far from being exempt from transitions of temperature, and that, too, better marked by the sensations than by the thermometer; and rheumatic affection, evidently derived from this source, is a common disease amongst the natives, and more especially amongst *their* women. At the time of their confinement from lying-in, they are placed in a small room, from which, at

the same time that all air is excluded by every crevice capable of admitting it being closed, a high temperature is kept up by means of a charcoal fire, a lamp being also kept burning; the subject having, at the same time, hot drinks with spices.* This costs many of them their lives at the time; and many are ever afterwards, no doubt from subsequent exposure to the weather, victims to incurable rheumatism.

“ To conclude: in this part of the world more especially, as the seeds of disease would appear to be very generally sown at the actual time of arrival, or soon afterwards, so whatever regards the maintenance of the health at this interesting period, requires the most anxious solicitude and the most vigilant attention;—all excess and exposure should be, as far as possible, prevented; the soldier should be made to enjoy all the comfort which a good bed, cool clothing, and a palatable, fresh diet can convey, at the same time that the state of his bowels ought to be watched and duly regulated.”

* This evidently applies to native practice.

Medical Return of His Majesty's Regiments in Bombay for one Year, from 21st of December, 1825, to 1826. The Corps not specified.

EFFECTIVE STRENGTH, 2793.	Fever.				Hepatitis.				Dysentery and all Bowel Complaints.				Pulmonary Com- plaints.				Phlegmon.			Rheumatism.				Venereal.				Grand Total of all Admissions, Discharges, and Deaths.			
	Admitted.	Discharged.	Dead.	Invalided.	Admitted.	Discharged.	Dead.	Invalided.	Admitted.	Discharged.	Dead.	Invalided.	Admitted.	Discharged.	Dead.	Invalided.	Admitted.	Discharged.	Dead.	Invalided.	Admitted.	Discharged.	Dead.	Invalided.	Admitted.	Discharged.	Dead.	Invalided.			
REGIMENTS.																															
4th Dragoons	2433	1934	147	4	271	217	10	68	1219	1065	98	21	220	194	6	5	180	172	...	439	386	3	...	1711	1549	5	...	7739	6877	315*	185
2d Regiment Foot																															
6th Ditto																															
20th Ditto																															

* N.B. The difference in the total amount of the number of deaths stated above, arises from the omission in this Table of deaths from chronic and surgical diseases.

Monthly Abstract of the Admissions and Deaths of each Description of Sick in His Majesty's Forces at Bombay, from 21st December, 1825, to 20th Dec., 1826.

MONTHS. 1826.	By Acute Diseases.			By Chronic Diseases.			By Surgical Diseases.			Total Admitted.	Total Died.	Total Proportion of Deaths.	
	Admitted.	Died.	Proportion of Deaths.	Admitted.	Died.	Proportion of Deaths.	Admitted.	Died.	Proportion of Deaths.				
January ...	199	20	1 in 10	34	2	1 in 17	131	1	1 in 131	364	23	1 in 16	Winds variable and strong; heat moderate at mid-day; mornings and evenings very cold; wind ranges from N.E. and N. to N.W.
February ...	176	31	1 in 82	28	1	1 in 28	171	...	...	375	32	1 in 11½	Calm in the mornings; at noon blustering wind; mid-day hot; wind N.E. and S.S.W.
March	196	11	1 in 18	29	...	...	171	...	...	396	11	1 in 36	Strong winds; heat at mid-day extreme; wind N.N.W.
April	151	8	1 in 18½	52	4	1 in 13	204	...	...	407	12	1 in 33½	Wind variable, blustering in the day, at night calm and sultry, W. by N. and N.N.W.
May	234	38	1 in 7½	69	2	1 in 34½	257	1	1 in 257	610	41	1 in 15	Calm in the forenoon, with oppressive heat; high wind in the afternoon; nights very sultry; wind W. and N.W.
June	224	24	1 in 9½	48	3	1 in 16	200	...	...	472	27	1 in 17½	Wind strong, with heavy showers frequently, during the day and night, for several days together, S.S.W.
July	279	16	1 in 17½	61	4	1 in 15½	229	1	1 in 129	569	21	1 in 27	Frequent heavy showers, with storms during the day; serene and sultry nights; wind S.E.
August	311	10	1 in 31	44	1	1 in 44	249	2	1 in 124½	604	13	1 in 46½	Heat very oppressive at mid-day; rain at night, with strong winds, S.S.W.
September...	517	17	1 in 30½	55	1	1 in 55	188	2	1 in 94	760	20	1 in 38	Constant rain with strong wind; S.W. and N.W.
October.....	418	37	1 in 11½	27	1	1 in 27	242	1	1 in 242	637	39	1 in 17½	Occasionally very heavy showers; mornings cool, clear, and dry; mid-day rather hot, and calm at night; wind S.W. by W.
November...	386	45	1 in 8½	40	5	1 in 8	157	...	...	583	50	1 in 11½	Winds variable and strong in the morning; serene and sultry nights; heavy showers on the 13th, 15th, 16th, and 17th; N.E. and N.W.
December ...	276	22	1 in 12	49	4	1 in 12½	136	...	...	461	26	1 in 17	Fair and cool; winds high in the afternoon; slight rain; W.N.W.

General Abstract of Sick Officers, Women, and Children, in His Majesty's Regiments in Bengal, from 21st December, 1825, to 20th December, 1826.—From Dr. Burke's Reports.

OFFICERS.

REGIMENTS.	Strength.	Treated.	Discharged.	Died.	
11th Light Dragoons.....	29	12	11	—	1 in 25; 4 per cent loss on Officers.
16th Lancers	34	7	7	—	
13th Light Infantry	21	4	3	1	
14th Foot	36	33	32	—	
31st Ditto	35	39	31	5	
38th Ditto	30	19	16	2	
44th Ditto	25	41	40	—	
47th Ditto	22	9	4	5	
59th Ditto	50	40	58	—	
87th Ditto	41	22	21	—	
His Majesty's Depôt at Chinsurah ...	36	8	7	1	
TOTAL	359	234	210	14	

WOMEN.

REGIMENTS.	Strength.	Treated.	Discharged.	Died.	
11th Light Dragoons.....	62	37	35	2	1 in 22½; 4¼ per cent loss in women.
16th Lancers	85	28	28	—	
13th Light Infantry	85	7	6	1	
14th Foot	56	33	30	1	
31st Ditto	126	143	126	13	
38th Ditto	59	20	15	5	
44th Ditto	180	105	100	5	
47th Ditto	112	97	88	6	
59th Ditto	99	118	111	6	
87th Ditto	104	6	4	2	
His Majesty's Depôt at Chinsurah....	190	81	71	10	
TOTAL	1158	675	614	51	

CHILDREN.

REGIMENTS.	Strength.	Treated.	Discharged.	Died.	
11th Light Dragoons.....	128	21	13	8	1 in 24; or 4 per cent loss in children.
16th Lancers	186	39	33	6	
13th Light Infantry	112	14	14	—	
14th Foot	104	58	54	4	
31st Ditto	142	175	137	32	
38th Ditto	97	7	6	1	
44th Ditto	200	75	73	2	
47th Ditto	95	23	18	5	
59th Ditto	145	51	45	6	
87th Ditto	154	2	2	—	
His Majesty's Depôt at Chinsurah....	235	29	27	2	
TOTAL	1598	494	422	66	

General Abstract of the Annual Return of Sick of His Majesty's Forces serving in the Presidency of Bengal, from 21st December, 1825, to 20th December, 1826. — From Dr. Burke's Reports.

REGIMENTS.	STATIONS.	Effective Strength.	Total treated.	Total discharged.	Total dead.	Total invalided.
11th Light Dragoons, from Bhurtpore.....	Cawnpore.....	567	840	767	39	11
16th Lancers, from Bhurtpore.....	Meerut.....	644	699	662	15	16
13th Light Infantry, from Ava.....	Dinapore.....	600	1893	1702	82	1
14th Foot, from Bhurtpore.....	River Ganges.....	972	1042	948	49	65
31st Foot, from England.....	Meerut.....	871	2718	2534	111	9
38th Foot, from Ava.....	Cawnpore.....	527	795	636	76	5
44th Foot, from Arrakan.....	Ghazapore.....	619	1418	1290	51	99
47th Foot, from Ava.....	Fort William.....	650	2126	1918	104	58
59th Foot, from Bhurtpore.....	Berhampore.....	823	2266	2113	54	40
87th Foot, from Ava.....	Fort William.....	620	1863	1724	107	74
Detachments of His Majesty's Regiments } from Europe.....	Chinsurah Depôt.....	1083	818	700	86	1
TOTAL—1 in 10 $\frac{1}{3}$ —Loss about } 10 per cent.....	.....	7976	16498	14994	774	379

APPENDIX, No. III.

THE following Extracts are from Reports made by Dr. ADOLPHUS, Inspector of Hospitals, Jamaica, to the Army Medical Board. We are indebted to Sir JAMES M'GRIGOR for his liberal permission to make them public. The science, talent, and professional zeal, which these Reports, especially in their full and unabridged form, evince, reflect the utmost credit upon Dr. ADOLPHUS, and upon the service of which he is so distinguished a member. We can truly say, that while they confirm our own experience in a different hemisphere, they have afforded us the utmost gratification, as well as information, in the perusal. They are valuable public documents and professional sources of knowledge.

“ 1823. — *January, February, March.* — In the quarterly return for December, 1822, I noticed that the head-quarters and one wing of the 91st regiment had been removed from Fort Augusta to Spanish Town, and that an aggravated form of fever had appeared amongst them. From these circumstances, and the known unhealthiness of the place at this season of the year, I predicted the disease would spread and prove fatal. The number of deaths shews my predictions were correct; and I am sorry to add three officers to the list. The disease is now nearly at an end; the admissions few in number and mild in form.

“ Soon after the disease appeared in Spanish Town, the garrison was diminished in numbers by removing the quarters to Port Royal, where they are at present enjoying as great a share of health as in any other part of the garrison, although they have had a few fatal cases — 8 in number at Port Royal out of 377 admissions, and 34 deaths in Spanish Town out of 280.

“ With the exception of these two stations, all other parts in the island have enjoyed an extraordinary state of good health. There have been fewer cases of phthisis than usual.

“ *April, May, June.* — The mortality this quarter has been less than has been recollected for years past; not only the military, but the civil inhabitants of every description on the island, have enjoyed health. The weather has been very fine.

“ Catarrhal affections were general during May: 44 admitted, accompanied with inflammatory

affection of the tonsils. In some instances, this inflammation ran high, but yielded to timely depletions and topical applications. Imprudent exposure to currents of damp air was the supposed cause.

“ Bowel complaints have also been common, particularly on Stony Hill; but of 94 admitted, only 3 died: they were mild, and yielded rapidly to the means used.*

“ *July, August, September.*—The *fevers* which prevailed in July, August, and September, 1823, were distinctly remittent, mild in form, but of a protracted nature, seldom coming to a crisis before the 12th or 14th day.† The head was much affected, and, in almost all those which proved fatal, delirium and coma supervened some days before death. In some instances, where the patient had been addicted to spirituous liquors, the disease was accompanied with delirium tremens, and proved fatal in a very short time.

“ At Lucea, after the garrison had been augmented by the arrival of a detachment from Fort Antonio, fever of an aggravated form (a circumstance most unusual at that Fort) made its appearance, and proved fatal to four or five patients in the space of a few days. Fortunately, however, its progress was arrested by a sudden diminution of atmospheric temperature, and not a single death has occurred since the 8th of August, although the admissions have been numerous.

“ In the treatment of this complaint, venesection was not found so necessary as is generally the case. Of course, when the attack was sudden or violent, or when any internal organ was threatened with congestion, it was resorted to with the best and happiest effects; but, in most instances, the disease yielded to smart purgatives, cold affusions, calomel, and antimony. During convalescence, which was often tedious, bark and acid, infusion of gentian with sulphate of magnesia, were found beneficial. In two or three cases, the disease terminated in mental derangement.

“ *Dysentery* had been prevalent at Stony Hill and Port Royal: at the first it was mild, and soon yielded to the remedies employed; but about the latter part of its prevalence, three fatal cases occurred; one of them had been five months in hospital; he had had frequent attacks of bowel complaint before, from which the intestines appeared to have suffered extensive injury. The diseased colon had formed an adhesion, a little above the caput cæcum, to the parietes of the abdomen. This adhesion was, for a length of time, distinguishable to the touch as a *hard lump*, which gave great pain on pressure; it at length ulcerated through the abdomen, and a considerable quantity of fæces oozed through the open sore.

“ Catarrhs appear general in these islands, and may be considered epidemic, more amongst the native population than European settlers.

“ *October, November, December.*—*Remittent fevers* have been more numerous during the present than the last quarter, particularly at Spanish Town, Port Royal, Kingston, and Up-Park camp; but by no means so common and so fatal as they generally prove at this season of the year.

“ At Up-Park camp the increase was manifest, after the arrival of five companies and the headquarters of the 50th regiment from Fort Augusta, the beginning of November; but a great number of the deaths (10) were men sent from Kingston barracks, to be treated in the regimental hospital.‡

* The means are not stated.

† Of 18 fevers, 6 died under 5 days; the rest went from 7 to 11 days. Dysentery was prolonged to 24, 92, 77, 151 days.

‡ Out of 32 deaths of fever, 17 cases died between the 2d and 5th day, and 9 between the 6th and 9th day.

But as this place was found objectionable on account of the dread which the men entertained of being sent to camp, I thought it advisable, towards the end of the quarter, to recommend the sick from Kingston to be sent to Fort Augusta, where, although a few deaths have occurred, I think they are doing better than they would have done in camp.

“ The type of the fever during the present quarter has been of that low and insidious kind which proceeds to a fatal termination without ever developing any leading features. Its attack was for the most part mild and deceptive, and the fatal termination was more the result of a train of morbid action which could not be controlled, than of any prominent symptom from which a person unacquainted with the disease could draw correct prognosis. In the advanced stages of the complaint, the head became much affected, and delirium and coma generally supervened, but gastric irritability was by no means uncommon.

“ In the *treatment*, brisk purgatives, calomel and opium, blisters to the head and neck, cold affusion, &c. were found more efficacious than venesection; and in almost every case where ptyalism was produced, recovery took place. Convalescence was tedious, and much advantage was derived by removing the men from one station to another for change of air. In one case it assumed the most violent and aggravated form. Lieutenant C——, of the 4th regiment, aide-de-camp to Major-General Sir G. K——, neglected, in the hurry of dressing, to put on his flannel waistcoat, which he had been long in the habit of wearing, and went to a ball about a mile from Kingston: the night was damp, and he danced a good deal during the evening; returning home he felt chilly; the following day he complained of languor, and during the night he was seized with rigors, headach, and pain in his back. On the following morning (Wednesday) I saw him, in company with Dr. Weir, but, in spite of our utmost efforts, he died on Sunday morning, with black vomit, and every other symptom of the most aggravated form of remittent fever.

“ *January, February, March, 1824.*—A similar fever to that which prevailed at this period last year, prevailed at Spanish Town, and the mortality was equally great. The inhabitants of Spanish Town suffered equally with the military, and at one time the magistrates found it necessary to remove a drain which had been thrown across the river immediately below the town, and which, in dry weather, completely obstructed the current of the river, and collected every impurity in the neighbourhood of the town, which would otherwise have been washed away; and, on one or two occasions, dead horses and dogs, which had been thrown there, created an intolerable stench.

“ Out of 61 deaths of fever in this quarter, 49 were in the 91st regiment:* 38 at Spanish Town; 4 in Port Royal; 7 in Fort Augusta: in all 49.

“ Several fatal cases were also at Fort Augusta; and it is supposed that, unless measures are taken to clear some small islands in rear of the fort, this place will speedily acquire its ancient celebrity. These islands are covered with mangrove bushes, and, till very lately, were overflowed by the tide every day; but as the tide seldom rises higher than a few inches in this country, the gradual accumulation of mud and vegetable matter among the bushes has at length completely prevented this salutary effect.

* The 91st regiment at Spanish Town were 268; at Fort Augusta, 368; at Port Royal, 173 strong: total, 809.

“ The weather during the whole of this quarter has been uncommonly dry, and the troops at Up-Park camp have enjoyed unusual good health.

“ *April, May, June.*—24 deaths of fever have occurred out of 34 during the quarter.

“ This quarter has been very healthy, though a few fatal cases occurred at Fort Augusta amongst some recruits. The 77th regiment arrived in the latter end of March.

“ The admissions at Fort Augusta were less numerous, and the cases decidedly milder, since the small islands in the rear of the fort were cleared of brushwood. The fever at Spanish Town took a decidedly intermittent type. The lancet was found useful. There was much drinking.

“ *July, August, September.*—Remittent fevers have been more prevalent during the present quarter than the last: 60 deaths of fever out of 70 during the quarter. The troops, during this period, were kept on the alert, in consequence of some disturbances in the island.

“ At Fort Antonio and Stony Hill, the 77th regiment lost 26 men; at Fort Augusta and Spring Vale, the 92d lost 23 men; and the 33d, 12 men at Falmouth and Montego Bay. The disease, from whatever cause it had its origin, was not confined to the military; it spread throughout the whole parish, and carried off numbers. Its duration varied from five to fourteen days. Its appearance was not characterised by any great degree of vascular excitement; on the contrary, there seemed to be a remarkable depression of all the vital energies; and in those cases where the disease was protracted, the debility became extreme. In every fatal case, yellowness of the skin supervened, and in two instances, black vomit.

“ *The Treatment.*—Blood-letting was employed in a few of the most robust cases, which seemed to afford temporary relief, but without any ultimate benefit. Purgatives were actively administered, and calomel pushed so as to affect the mouth, without any benefit. Blisters and sinapisms to relieve congestion. Ammonia and other stimulants were had recourse to early. Cold affusions seemed to have a prejudicial effect. The warm bath was grateful, and afforded relief.

“ *Post-mortem examination* threw no light upon the subject. The venous system was gorged with blood. The stomach was, for the most part, filled with dark, coffee-ground matter; the villous coat highly vascular, and in some parts abraded. The external coat bore marks of inflammation, as did most of the small intestines.*

“ The bulk of sickness is fever, catarrh, ulcers, accidents, dysentery, &c.

“ *October, November, December.*—The sickness and mortality at Port Antonio appear to have arisen from a bad state of the barracks; they were, therefore, removed to Port Royal in September. The garrison of Port Royal, previous to the arrival of the detachment from Port Antonio, were healthy: a company of the 77th, which had never quitted that post from the arrival of the regiment in India, came from Stony Hill in October in the highest health; but in a short time after its arrival at Port Royal, it got sickly. Between the 7th November and 11th December, when it again returned to Stony Hill, out of 33 men taken sick, 11 died with black vomit; and since the removal of this company, Port Royal has again become healthy. No fresh case of fever or any other disease, has occurred.

* See an account of the appearances after death in the worst forms of fever, viz. the malignant or adynamic, at page 457.

*“ January, February, March, 1825.—*Remittent fever has as usual been the most prevalent disease during the present quarter; and at some of the posts the mortality has been considerable; but as the disease which prevailed at Stony Hill, and proved so destructive to the 77th regiment, has been the subject of a separate report, I shall only remark at present upon the fever which prevails at Port Morin and Savannah la Mer; and I sincerely hope this will be the last time I shall have occasion to mention either of these posts in a medical report, as I am convinced, from their situation, that they can never be occupied for any length of time by European troops without a frightful sacrifice of human life; and as I understand the neighbouring part of Port Antonio and Maroon Town are sufficiently near, in a military point of view, to protect the surrounding country from all danger, whether domestic or foreign, I hope that the authorities will see the propriety, nay, the absolute necessity, of abandoning them altogether in December.

“ A company of the 33d was marched from Maroon Town to Savannah la Mer; a company of the 50th to Port Morin: they were healthy for a fortnight after their arrival, but before the close of the year they became so sickly that I felt it my duty to recommend their being removed; and in January, out of 54 men at Savannah la Mer, 28 had fever, and 6 died, from the 23d December to the 3d January: at Port Morin, of 57 men, 26 had fever and 10 died, from the 19th December to the 4th of January; and several men have died since their return.”

The type of fever was bilious remittent, such as is generally met with in the West Indies during the autumnal months. Nothing new or worthy of notice regarding the treatment is mentioned. Twenty-four died of fever in the 92d regiment, out of 518 men, at Up-Park camp, of from four to nine days' illness: 46 deaths of fever in the 77th regiment, at Stony Hill, out of 620 men; from four to nine days' illness.

*“ April, May, June.—*In consequence of the severe form of fever which was prevailing at Stony Hill in the last quarter having evinced no disposition to abate in any degree, I recommended, at an early period of the quarter, that those men who had not been attacked should be withdrawn, to remove them from the immediate influence of the noxious effluvia which emanated from the soil in the neighbourhood of the barracks at Stony Hill. So impressed was I with the importance of this measure, that I ventured to recommend a detachment to be sent to Up-Park camp. In doing this, however, I was guided more by the exigencies of the service than any predilection of my own for that station, although the troops in camp were at the time enjoying an unusual share of good health; and I knew that so long as the weather continued dry, no danger was to be apprehended. But, as it is not always possible to guard against contingencies, it was not without mature deliberation I ventured on this step, after the many reports I have had occasion to make of the risk attending unassimilated troops being sent to camp. The result, however, has proved favourable beyond my most sanguine expectation; and I am now much gratified that I resorted to the measure, as I am convinced that many lives have been saved to the service which would have fallen victims had they been suffered to remain at Stony Hill. It is true, that out of 134 men who were brought down from Stony Hill, 32 were attacked with fever, and 4 died; but as 3 out of the 4 occurred soon after the detachment arrived in camp, I am induced to think that they had imbibed the seeds of the disease before they left the Hill. Something similar,

although in a less degree, occurred in the company which was sent to Fort Augusta, and might be attributed to the same cause. The favourable result of the removal of many of the 77th regiment* from Stony Hill to Up-Park camp and Fort Augusta, in the present instance, strongly points out the necessity of removing men from one post to another when sickness prevails,† and evinces in a striking manner the non-contagious properties of the fever of this country, as no precautionary measures were taken to separate the men of the 77th from the 91st at Fort Augusta; and yet the disease was not communicated to a single man in the garrison, although some of the fatal cases were marked by the worst symptoms that characterise the ardent fever of this climate. At Fort Royal, also, remittent fever under a severe form made its appearance among a detachment of the Royal Artillery, 89 strong, arrived from England in February, and proved fatal to 12; and, strange to say, a detachment of the 50th regiment of recruits, who arrived from England about the same time, who were fed in the same way, and who inhabited the same barracks, remained in a manner exempt from disease during the time fever was committing such ravages amongst the men of the Royal Artillery. Surely, had the disease been of a contagious nature, it must have been communicated to the men of the 50th, who were in habits of daily and unrestrained intercourse; but no such result happened, and not a single man of the 50th perished.

“ The weather for the last two months has been unusually wet; and, in consequence of the damp, bowel complaints have been prevalent, not severe. As soon as the earth was fully saturated with moisture, and the state of the weather would admit, the detachment of the 77th were removed from Fort Augusta and camp to Stony Hill; and they are now enjoying health. Such cases of fever as occur are among recruits; the symptoms mild, and mortality by no means great. Since the wet weather, febrile diseases have been more prevalent in camp and in Spanish Town; and I fear, from the situation of the latter, and my knowledge of its unhealthiness after heavy rains, that it will be attended with loss.”

July, August, September. — The deaths were 12 per cent in this quarter. The effective strength of the regiments were 2703, of which 242 died in the quarter, at the different stations, namely:— of the detachments of the 50th Regiment and Royal Artillery, at Port Royal, 304 strong, 11 have died: of the 50th regiment at Spanish Town, 348 strong, 64 have died of fever, and 4 of other diseases; 79 of this regiment died from the 16th June till the 17th September; the deaths taking place from the fourth to the ninth day of illness. — 77th Regiment, at Stony Hill, 468 strong, 66 died of fever and 2 of other complaints, from the 8th June to the 4th September; the deaths occurring from the fourth to the eighth and ninth day of illness. — 92d Regiment, at Up-Park camp, 556 strong, 51 died, from the 21st June till the 15th September. — 91st Regiment, at Fort Augusta, 499 strong, 25 deaths in the quarter. — 33d Regiment; of 202, at Falmouth, 7 died; of 225, at Maroon Town, none died; of 101, at Lucca, 5 died. — Of the Royal Artillery, 7 died. — The duration of the disease was from two to eleven days.

* Strength, 264 men; 41 deaths of fever in the 77th regiment, at Stony Hill, between the 16th March and the 1st April. Admitted 256; 5 died in May: almost the whole deaths were between one and seven days' illness.

† This confirms our observations on the removal of troops, as insisted upon by us in the chapter upon convalescence from fevers, &c. in the body of the Work.

“ *October, November, December.*—The 77th and 50th regiments, as will appear from the above, suffered severely from the prevailing epidemic fever at Stony Hill and Spanish Town; and as the measure of encamping the men, which had been resorted to at both these posts, had not succeeded in arresting the progress of the disease, or in mitigating its violence in the smallest degree, I recommended that some alteration should take place in the distribution of these two regiments, in hopes that by removing the men to a distance from the local source of disease, and by diverting their minds by novelty and change of scene, and preventing them from dwelling upon the calamities they had lately witnessed, they might derive some of the advantages which I have so frequently known to attend similar removals in this country.

“ The Major-General not only approved the suggestion with regard to the two regiments in question, but stated, that as there was a general change of quarters in January, it might as well take place then; and, in consequence of this decision, the 77th regiment was removed from Stony Hill to the north side of the island, to relieve the 33d, which was brought round to Port Royal and Spanish Town. The 50th regiment moved from Spanish Town to replace the 77th at Stony Hill; and the 91st from Fort Augusta and Kingston, to replace the 92d in camp.

“ The 50th regiment, with a few exceptions of cases of fever, which occurred soon after their arrival at Stony Hill, and in which there was every reason to suppose that the individuals had brought the seeds of the disease along with them, has enjoyed almost a total exemption from febrile disease. The sallow dejected appearance which the men had on their arrival at the Hill has given place to a glow of health nearly European, and the general improvement is so very apparent that it cannot fail to strike even the most casual observer.

“ The 77th regiment, also, at Lucea and Maroon Town, has enjoyed nearly an equal exemption from disease; but at the *head-quarters of the regiment at Falmouth*, so serious a form of fever made its appearance about the middle of November, that I considered it necessary to send over the physician of the forces to inquire into its nature and origin, and to endeavour, by removing part of the garrison to Maroon Town, or adopting any other measure he might deem expedient, to arrest its progress.

“ The fever at Falmouth assumed a distinctly remittent type, and by the opportune arrival of a supply of sulphate of quinine, which Sir W. Franklyn had considerably sent out in one of His Majesty's packets, I was enabled to forward a supply by post to Mr. Richardson, acting surgeon of the 77th regiment; and which Mr. R. states had very decided effects in checking the disease: indeed, I cannot speak in terms sufficiently strong of the value of this medicine in the treatment of the fever in this country, when there is either a remission or a distinct intermission. In intermittent fever I have seldom known it fail; and in remittent, where irritability of the stomach forms so frequent and so formidable a symptom of the disease, its advantages are incalculable, as it seems to comprise the desideratum so long sought for in the administration of bark, viz., to have its active febrifuge principle compressed into so small a compass as not to offend the stomach, which the bark in substance was so apt to do.

“ With respect to the 33d and 91st regiments, I regret to say, that the change of quarters has not been attended with such beneficial results as those I have noticed of the 50th and 77th

regiments. The 33d, on being brought round to the south side of the island, were quartered between Port Royal and Spanish Town; and they had not been long at either post before fever made its appearance, and proved fatal to a great number. In the type of fever which proved fatal at Spanish Town, there was nothing to distinguish it from the autumnal remittent which generally prevails at that post towards the close of the year.

“ In the 91st regiment, at camp (Up-Park camp, we presume), the disease proved more fatal than at any other post, and generally terminated in *black vomit*: another very striking feature was, that about 1 in 7 of the cases was attacked with erysipelas of the head and face, often of the arm and one side of the thorax; this symptom generally made its appearance from the third to the seventh day, and was attended with high sympathetic fever, so much so, as to produce effusion into the ventricles of the brain, which proved fatal,* particularly when the disease was conjoined with erysipelas. When erysipelas attacked the arms or side of the thorax, it generally ended in suppuration, which rendered the convalescence slow and tedious.

“ The 92d regiment, which had been suffering at camp previous to its removal to Fort Augusta, has enjoyed almost a total exemption of disease at that post. It is true that a number of fatal cases have occurred, but they were, with the exception of one or two, sent down from Kingston barracks, a post *notoriously unhealthy*.”

October, November, December.—Effective strength, 2266; 312 deaths during the quarter.—91st regiment, Up-Park camp, 573 men; lost in the quarter 116 men by death.—33d regiment, at Port Royal, 300 men; lost 45: at Spanish Town, 271 men; lost 45: effective strength, 571; deaths, 90.—50th regiment, at Stony Hill, 298 men; lost 25.—77th regiment, at Falmouth, 124 men; lost 24: at Maroon Town, 178; lost 4: at Lucea, 4: effective strength, 305; deaths, 32.—92d regiment, at Fort Augusta and Kingston, 425; 37 died.—Out of 312 deaths, 295 died from fever.

The greatest proportion died between two and ten days' illness. There are some cases that have lingered for thirty-five or thirty-six days, but they are few.

* Relapses were frequent, and not a few terminated fatally.

APPENDIX, No. IV.

THE following Papers are inserted in illustration of the observations which we made in the concluding Chapter of the Work, respecting the management of Soldiers, especially on their arrival in India.

To the Right Honourable Lord William Cavendish Bentinck, Governor in Council, &c. &c. &c., Fort St. George.

“ MY LORD,—The encouragement which, under your Lordship’s government, has uniformly been held out to every attempt that has for its object the advancement and prosperity of the public service, has actuated me, at this time, to digest and submit the following plan of an institution, to which my mind, for some time past, has been more or less directed; and which, neither connected with loose speculation nor directed by motives of private interest, but presenting unequivocal considerations of solid and extensive national advantage, is thereby ensured of meeting furtherance and support from the wise and liberal policy which directs the British councils at this Presidency.

“ During a residence in this country of nineteen years, five of which employed as regimental surgeon to an efficient European corps, and the rest in the most active situations that, in the course of service, offered either in garrison or in the field, singular advantages have been afforded me of observing and becoming intimately acquainted with the most material circumstances regarding the constitution and treatment of European soldiers in this climate.

“ The result of much serious consideration and deep reflection, which, in the course of practice, have occasionally and unavoidably, on this important subject, been pressed upon my mind, has been a thorough conviction, that an institution, which is yet wanting, might be the means not only of saving the lives of many that, for want of it, either absolutely perish or are otherwise lost to the service, but might have a subsequent operation of retaining the military establishment in general more effective, better calculated to sustain the climate, and consequently more capable of undergoing the nature of the service thereto peculiar.

“ The institution to which I allude, and which, for these reasons, I have no hesitation in supposing to be intimately connected with the well-being of this extensive military establishment, and,

therefore, productive of the most inestimable advantages of public consideration, is a *Seasoning Dépôt*, or *Convalescent Hospital*, for the reception of all troops, but more especially the recruits for his Majesty's and the Honourable Company's regiments, immediately on their arrival in this country from Europe.

“ In order more clearly to illustrate the necessity of such an institution, and of obviating, if possible, the many inconveniences and unfavourable circumstances incident to European soldiers on their first exposure to this climate, I shall only beg leave to contrast the baneful effects of the system regarding them at present in use, with the salutary advantages likely to be derived from the adoption of the plan which I am about to propose.

“ The European soldiers for this service, after being four or five months pent up, perhaps crowded, on board ship, all the time victualled chiefly on salt provisions, and that cleanliness which is conducive to health probably not observed, are, on their landing, exposed to an inhospitable climate,—have not, perhaps, an immediate opportunity of getting rid of their sea-clothes, in which the seeds of disease may be lurking,—have access to the common bazars, where they meet with unwholesome fruits and other hurtful productions of the country,—go about in the sun, and indulge in too free a use of spirituous liquors, and every species of debaucheries to which, at such a time of life, they may be supposed to be addicted,—they mess in common with the other troops, in whose diet such a proportion of animal food is used as most eminently predisposes to a state of putrescency in the habit:—after remaining a short time about the Presidency, they are marched to join their corps at a distant station, and many on this occasion either move with the latent seeds of disorders, or, from a desire for novelty, and the fear of being left behind their companions, conceal complaints under which they actually labour. The consequence of all which is, that, in a journey of any extent, a proportion of about one-fifth is either entirely lost to the service, or thrown into different hospitals on the march, and the rest arrive at their destination only fit to be disposed of in a similar manner.

“ Instead of this, let them, when landed, be instantly marched or conveyed in doolies from the beach, without any intermediate communication whatever with the bazar or inhabitants, to a short distance, where clean clothes, wholesome food, and comfortable well-aired lodging, with every necessary accommodation, shall be ready prepared for their reception,—let them have the advantage of immediate and constant medical advice and assistance, from medical officers experienced not only in the cure, but also in the prevention, of the diseases with which their constitutions are most likely to be assailed,—let their victualling, clothing, exercise, and every circumstance relating to their conduct and economy, be put solely under medical direction and control, with this exception, that they shall be under the immediate inspection and authority of non-commissioned officers of the most sober and circumspect deportment from the respective corps, to institute a system of drill and healthy discipline, and, by their instruction and example, to instil proper notions of military duty. Let them be enclosed in bounds sufficient to admit of necessary exercise, their families accompany them, and no external intercourse with the inhabitants during the seasoning period to be admitted. Let them have every convenience for washing and bathing, a sufficient period of probation in the dépôt allowed, and then marched to their respective corps under the most favourable circumstances of season and conveyance.

“ From these opposite views of the subject, the following application may be drawn :—That the European soldiers, being thus, on their arrival, removed from vice, and whatever might have a tendency mischievous to their constitutions, and kept, during that period in which the most danger in such habits from the climate is to be apprehended, under a salutary system of air, diet, and exercise,—a large proportion of what now, in the course of the first few months, are, in some shape or other, lost to the service, would not only be saved, but the whole European force rendered more robust, and better ensured against future sickness and other evils attendant on the soldier's life. That, further, the recruits, thus drilled by their respective non-commissioned officers, would, by the time they quit the depôt, be in as forward a state as to discipline as if they had been present with their corps; and the service thereby sustain no inconvenience on account of the delay occasioned in seasoning.

“ I now, therefore, proceed humbly to submit to your Lordship's consideration,—and subject to such alterations, amendments, and improvements, as, in your wisdom, may be judged expedient,—the following regulations for a Seasoning Depôt, to be established under the Presidency, for the reception and management of the recruits of the season, and other fresh troops arriving from Europe :—

“ 1. That a building, with out-houses, calculated to accommodate eight hundred men, be allotted for this purpose.

“ 2. That there be to this attached a piece of ground sufficient in extent to admit of drilling and exercising this number of men, and containing wells and tanks in due proportion for all the purposes of cooking, washing, and bathing,—the whole enclosed with a high wall or impenetrable fence, to prevent the possibility of the admission of liquor, or any other pernicious commodity; and effectually to secure against every species of external communication.

“ 3. That a portion of the building be set apart for an hospital; and the sick to be under the existing regulations for the hospitals under this Presidency.

“ 4. That one or more commissioned officers, of whatever rank may be judged advisable, be stationed at the depôt.

“ 5. That there shall be furnished by each corps having recruits in the depôt, a proportion of sober and steady non-commissioned officers, for the purpose of exercising the men, as the surgeon, in communication with the commanding officer, may direct.

“ 6. That the dress of the men shall be straw hats, nankeen jackets, and in other respects the same as effectives doing duty with their corps.

“ 7. That each man, in the articles of shirts, waistcoats, and pantaloons, shall be furnished with six of a sort.

“ 8. That the diet, as to quantity, shall be regulated for those in health, as near as circumstances may render expedient, in the proportion that is allowed among the other troops of the establishment.

“ 9. That each man out of hospital shall be daily allowed a pint of punch, or plain grog, to be mixed and drank under the immediate inspection of the surgeon.

“ 10. That the barrack-master shall supply the depôt with all the articles which he at present furnishes for the other troops of the establishment.

“ 11. European medicines and instruments to be supplied for the use of the depôt from the Honourable Company's stores.

“ 12. That monthly returns be made by the surgeon to the commander-in-chief and medical board.

“ 13. That a sufficient proportion of guards be furnished for the duty of the depôt.

“ 14. That the depôt shall be under the general superintendence of the medical board, the adjutant-general of the army, and the adjutant-general of his majesty's troops.

“ The number of recruits yearly arriving being so variable, will make it difficult to ascertain the exact public expense incurred by this institution. However, the following calculation on 100 men for one month will lead towards forming a tolerable estimate of the probable amount, exclusive of the building and enclosure:—

	Pagodas.
One hundred men, at 5 fanams per diem for one month, is	333 15 0

DEDUCT

One fanam per diem, which the Company at present pay for every European on this establishment, for one month, is	66 30
Twenty, or one-fifth of them, which would otherwise be absent from their corps in hospital, and paid for by the Company at the rate of 5 f. 40 c. per diem, for one month, is	75 15
Ten men in a hundred annually saved to the public by this institution, and which, by invaliding, pensioning, or death, would otherwise be lost to the service, calculating each European, by the time he arrives in this country, to cost government £60, is, per annum, £600, or 1500 pagodas,—for one month, is ...	125 0
	265 0 0
Total current monthly expense incurred by this institution for one hundred men	68 15 0

“ Though this last calculation may appear speculative and of remote consideration, yet the result of my own experience, and the concurrent opinion of the most intelligent officers and medical gentlemen with whom I have conversed on the subject, induce me to suppose that the calculation is within bounds, and that the public saving would therefore be more considerable on this account than what I have here stated.

“ Were further arguments necessary to be adduced in support of the expediency of the institution, many instances might be particularised of the fatal effects that have occurred on this coast, in consequence of unseasoned Europeans undertaking active duty with their corps, or being ordered on field service, immediately on their arrival; but it is humbly hoped, that what has been already stated will have sufficient weight to call that attention which the importance of the subject seems to demand.

“ I have the honour to be, my Lord, &c. &c. &c.

“ *Fort St. George, 22d September, 1804.*

(Signed)

“ ALEXANDER BOSWELL, Surgeon.”

Extract from Dr. Burke's Annual Medical Report for 1826, of His Majesty's Army in Bengal, respecting the Depôt at Chinsurah for His Majesty's Troops.

“ THIS depôt was established in the month of May 1826. Its site is that of the late Dutch factory on the west side of the Hoogly, and about twenty-eight miles by water from Calcutta, to which it is preferable in every point of view, and had been found and ever accounted the Montpellier of this part of Bengal with good reason.

“ The town of Chinsurah is irregular, like all Indian towns, the houses generally built of brick, detached, and with trees interspersed in the intervening spaces. The soil is loamy or stiff clay.

“ The old Dutch fort, or factory, now occupied as the barrack, consists of three sides of an irregular quadrangle. The east front is parallel to, and distant from, the bank of the Hoogly about two hundred yards. The greater part of the buildings are of two floors: the ground-floors would appear to have been intended for godowns or store-houses. The roofs are terraced, and afford an agreeable walk for the men. There is a spacious park, with the avenues of fine shady trees, and there are three tanks, which supply the greatest abundance of good water: the smallest of them has been allotted, at the recommendation of the inspector of hospitals, as a bathing-place for the men, till the baths can be erected.

“ The hospital, at present, is a hired building, lofty, commodious, with all suitable offices, and well calculated for the accommodation of seventy or eighty patients. There are to be built barracks for about 800, and an hospital, planned and ordered on the most approved principles. The new barracks have already the first story almost erected, and, it is to be hoped, will be finished in the next year, 1827. Such a station was long a desideratum for the different detachments of His Majesty's troops arriving from other places, and particularly for the recruits from England, who, on their arrival, might be exempt from the confined air and temptations to debauchery of Fort William, and refresh themselves after a long voyage, while every preparation could be made, and precaution taken, to fit them for their ulterior destination to the different military posts extending up the Ganges to Meerut, a distance of above a thousand miles, and requiring often a period of several months to accomplish it.

“ With respect to the period since its establishment, it is necessary and important to take into consideration, that all the young and raw recruits newly arrived from England during the most *unseasonable period* of the year, viz. the hot winds and rainy season, have been stationed there, and their sick all treated at the Depôt Hospital, as also the sick and weakly of the 87th regiment, from Ava.

“ The numerous detachments of recruits from the different regiments of His Majesty's service from England arrived in quick succession, and at the most unseasonable time of the year, in Bengal; and from the crowded, insufficient, and unfit state of the Presidency Hospital and of Fort William, from the want of the proportion of proper boats for their conveyance to their stations to the upper provinces and, it might also appear, from some want of due arrangement in the commissariat and quarter-master-general's department, a much greater number was, at one time, thus accumulated for a short period

at Chinsurah, than it was ever calculated for, or intended to hold: in consequence of which, as was to be expected from the crowded state of the barracks and the heat of the season on new recruits just arrived from Europe, serious sickness existed among them. The prevailing diseases were, the endemic remittent fever, dysentery, and cholera. The recruits, particularly of His Majesty's 13th light infantry, last arrived from England, suffered severely from sickness. The men, young plethoric subjects, appeared, for the first three weeks, particularly to labour under violent excitation. At every parade, morning or evening, several would drop down in the ranks, or stagger or stumble against their companions, which was followed by violent headach, quickness of pulse, fulness about the eyes, and nausea. To the effect of climate were to be added those of irregularities of the ingesta, and especially to excess of spirituous potations, of a bad species of spirit, to be here found in all the bazars. These recruits were subject to severe attacks of fever, which assumed the ephemeral type, as it yielded generally in thirty-six hours to copious blood-letting at the commencement, with purgatives, &c. &c.

“ *Cholera Morbus*. — Of the cases treated, many were brought into the hospital in the last stage of the disease; but in several, this state, or that of collapse, was the first observed. Among the recruits this disease was more frequent, severe, and appalling. No other symptoms were observed than those which are peculiar to the disease in India. In the treatment, when the patient was reported in an early stage, and the pulse was still to be felt, and of good strength, blood-letting was practised. The warm bath was employed, but not in every case, and it seemed to give temporary relief, and to suspend the spasms. Calomel in ʒj. doses with tinct. opii, ʒss.; anodyne enemata; frictions with ol. terebinth.; blisters to the stomach or abdomen; stimulants, as camphor, ether, opium, brandy, and wine, were the remedies employed.

“ The following were the appearances on dissection of one fatal case of cholera, which occurred in a young man, ætat. 20, of His Majesty's 13th light infantry:—The lungs were inflated, and presented an extraordinary appearance; several large vessels on the external surface were filled with air, the coats thereof particularly thin and diaphanous: (it may be noticed, that similar appearances were observed, on dissection of some men of His Majesty's 67th regiment, who died of cholera here in May last). The lungs adhered firmly to both sides, and bore evident marks of former inflammation. When cut into, scarcely a drop of blood was to be seen. The liver was gorged with blood, the gall-bladder filled with black-coloured bile, resembling tar. Throughout the abdominal cavity there were marks of great congestion.

“ *Recruits*. — From the regimental returns and reports for 1826, it seems that the recruits for His Majesty's service who arrived in Bengal from England during the hot and rainy season particularly, (as from April to September inclusive,) were very sickly, and many casualties occurred among them. This has been found to be generally the case whenever recruits arrive here at the above periods, which are more especially obnoxious to youths or boys, and of such was the greater part of these recruits composed.

“ From the different habits of military and civil life, young soldiers in every climate are particularly liable to disease, and, *ceteris paribus*, the younger the more susceptible to feel the change; and this change has a direct tendency to induce a highly inflammatory diathesis, leading to such explosions of disease as were witnessed here among the above recruits. This tendency to disease exists, it

is true, in all seasons in India, in the young and plethoric ; but it is in the hot and rainy season, and particularly at the commencement and termination of the rains, that endemical diseases are the most dangerous and fatal ; yet this was unfortunately the time at which these recruits arrived in Bengal. One inflammatory attack is only the prelude to another in the young recruit, until at last he is either carried off, or remains relaxed, debilitated, and worn out, before he reaches the proper period of manhood and vigour. If one inflammatory attack predisposes to another, and that part which has once suffered be more liable again to become affected, we can judge how soon organic derangements take place, and how quickly the constitution may become undermined. This must tend to the conclusion, that the season for the soldier's entrance into India from Europe should be that in which he will be least obnoxious to the more violent and inflammatory attacks of the endemics of the climate, which is in the cool season, or that in Bengal from the end of November to the end of January ; for which purpose their sailing from England should be regulated accordingly. Instead of being sent, as has generally been the case latterly, in the China ships that leave England in January or February, and arrive here in May, June, or July, they should be embarked in England in May or June, so as to arrive at Bengal in November.

“ The period of life for the young soldier coming to India should be, for the youngest, the age of formed manhood, and when his habits have been fixed. He should, moreover, have been drilled before coming to this climate, in which so much is unavoidably suffered by the fatigue which the young soldier must undergo in learning the first parts of his exercise. In short, the soldier should arrive here at the age and period when he can be of the greatest use when called upon for active service. That youth could ever be the proper time, the records of every corps here disprove the assumption.

“ The coming to India at the mature age of twenty-five or twenty-six, or full-grown manhood, having been found to be the most favourable to health, and less so to disease in India,—that I conceive to be the period of life which should be fixed upon as the most proper for sending out young soldiers to this country.”

Abstract from the Annual Return of Sick of His Majesty's Regiments in Bengal, from the 21st December, 1825, to the 21st December, 1826, inclusive.

Effective Strength.	Admitted.	Discharged.	Dead.	Per-centage.
7976	16490	14994	774	10

	Effective Strength.	Treated.	Cured.	Died.	Per-centage.
OFFICERS	359	234	210	14	4
WOMEN	1158	675	614	51	4
CHILDREN	1598	494	422	66	4

Extracts from a Letter addressed to the Military Secretary of His Excellency the Commander-in-Chief, respecting the Management of Troops, &c., by the Secretary of the Medical Board, Bombay.

“ Period of Arrival.—The most dangerous period of a soldier’s life, in this country, is immediately after his arrival; and this risk is increased by the season of the year at which recruits from England at present reach Bombay, which is immediately before the rainy season; during and after which, fevers and dysentery are always more or less rife. Could it be arranged that European recruits should arrive about the beginning of November, many lives would no doubt be saved, from the four months’ seasoning they would undergo during a comparatively cool and healthy period of the year.*

“ Management.—But at whatever season they may arrive, they require to be watched with great care and attention, as, till they are in some degree accustomed to the climate, the smallest excess, or any considerable exposure to the sun, will subject them to great risk. The necessity ought to be particularly impressed upon their minds, to make immediate application, on any feelings of illness, for medical assistance; and the danger of delay should be pointed out to them. Young soldiers, from being unaware of the insidious commencement of disease in this country, or from aversion to going into hospital, frequently allow derangement of the bowels, which appear to them slight, to proceed so far before applying for relief, that they ultimately terminate in incurable dysenteries. The officers and non-commissioned officers of the companies to which they are attached ought to be instructed to keep a strict watch over their health; and on the suspicion of any individual being unwell, he should be immediately taken to the hospital, for the purpose of being examined by the surgeon. The whole of the recruits should also be examined twice a week, for a certain period, by one of the medical officers attached to the regiment. Bedding and proper clothing should be in readiness on their arrival, so that they may not suffer any privations at a period of so much risk and danger.

In respect to drill, it never should be carried very far immediately after the landing of recruits. From the indolent habit of body induced from confinement during a long sea-voyage, they are incapable, at this period, of undergoing much fatigue, and should be made gradually fit for their work. As much voluntary exercise as they may choose should be permitted during the morning and evening, when not otherwise employed, as, under such circumstance, exercise is much more conducive to health than when it is imposed by rule, and is consequently considered as a labour and annoyance. This last remark is applicable to soldiers of every description, and in all situations.†

* These four months would be useful in giving them time to provide themselves with what may be requisite for their health during the rainy and cold seasons.—*J. A.*

† Of the whole of the above we highly approve. Instead of examining the recruits twice a week, as here recommended, we would have them examined at least once daily.—*J. A.*

“ *Temperance.*—It is of the utmost consequence, as regards the health of European regiments in this country, to maintain habits of temperance among the men. It must, however, be confessed, that this is an object of not very easy attainment, as, besides the liquor which the soldiers are allowed to obtain from regimental canteens, which is already by far too much, and which the Medical Board would recommend to be reduced by the half, they cannot, in most situations, leave their barracks in any direction without being able to procure toddy, ardent spirits, or pernicious narcotic mixtures of some kind or other, at the very lowest prices. Many endeavours have been made to induce the soldier to expend his surplus pay on more expensive and less pernicious liquors than those he now commonly uses, but with little success; and the temperance, or otherwise, of a regiment will always depend on the materials of which it was originally composed, and on the well-directed and persevering efforts of the commanding and other officers. Every effort should be particularly made to give habits of sobriety to the young recruit, as, if he once becomes a confirmed drinker, there is little or no hopes of his ever reforming. Many people have considered the intemperance of European troops in this country as the sole cause of the sickness and mortality which prevails among them; but, though habits of drunkenness act powerfully in aggravation, they have had too much laid to their charge by those who are of the above opinion.* Whenever British troops have suffered from endemial or epidemic diseases, the sober and steady men have enjoyed no exemption from their ravages, and no very well marked difference in the chances of escape has been noticed between them and their more intemperate comrades;† but, as it stands to reason that habits of drunkenness must induce disease, injure the constitution, and ultimately shorten life, every effort should be made to prevent their prevalence among British troops any where, but more particularly in a country the climate of which is in itself so inimical to their constitutions as that of India. Before leaving this subject, it may be added, that no liquor should ever be issued to European soldiers in this country except in a state of dilution.‡

“ *Clothing.*—On the subject of the clothing of the soldiers, the Medical Board have little to observe, as they believe that, in respect to it, every attention has been already paid to their comfort and health. As regards coolness and warmth, it requires to be modified, not only according to the season of the year, but to the station at which the troops may happen to be located; and perhaps the only general principle upon which to proceed, is, to consult, as far as possible, the feelings of comfort on the part of the soldiers in respect to heat and cold. The use of

* Although not the sole cause, it is a most powerful one, particularly of dysentery. — *J. A.*

† This observation certainly does not accord with our experience. That habits of drinking, if not carried to very great excess, but regularly persisted in, may not dispose an individual, in a very remarkable degree, to be affected by fever, during the prevalence of an epidemic, or at a particularly unhealthy season, we believe to be generally the case; as the causes of disease, under such circumstances, are too powerful to be much influenced by practices which do not very sensibly lower the energies of life. But that intemperance induces disease of the liver, stomach, and bowels, particularly of the large bowels, more, perhaps, than any other cause to which persons residing in a warm climate are exposed, is a fact which must have forcibly struck every experienced practitioner in India. — *J. A.*

‡ We perfectly agree with this recommendation. — *J. A.*

a long, thick flannel banyan and cummerband,* during the monsoon, will exert considerable influence in preventing bowel complaints, — one great source of mortality among Europeans in India; and to promote the same end, all men on guard, or who are obliged to sleep in their regimentals, should at the same season, under such circumstances, be invariably provided with thick woollen socks and good water-proof shoes,† as nothing is more prejudicial to health than the feet being long exposed to damp, and particularly during sleep. In the rainy season, also, the soldiers should be made to take every opportunity, as *breaks* in the weather occur, of exposing their clothing to the sun; a measure of considerable importance in the preservation of health, but which is not always attended to.

“ *Bedding.* — A soldier’s bedding should be composed of as simple materials as possible, and of such a nature as to be easily kept clean and free from bugs; an insect with which every building in this country is more or less infested. The Board do not know that any thing better could be adopted so generally applicable and useful than the carpet, blanket, and pillow, at present in general use; but whatever materials are used, the greatest attention should be paid to cleanliness, as in the instance of clothing; and to avoid the bad effect of damp, the soldiers should be obliged to expose their bedding to the sun very frequently during the monsoon months.‡

“ *General Rules.* — The European troops in this country should be prevented, as much as possible, from exposing themselves to the sun, more particularly during the hot months; and this is more necessary to be attended to in the case of recruits lately joined, or newly arrived regiments. The confinement, however, which is requisite to effect this object, should be relieved as much as may be prudent, by allowing the men not on duty or parade as much liberty as possible during the cool hours of the morning and evening. The monotony of a soldier’s life in India, not only frequently leads to the worst plan of relieving it — dissipation, but the depression of spirits, which is incident to it, is also a predisposing cause of disease. It is almost needless to mention, as a part of the interior management of a European regiment, that all innocent amusements ought to be encouraged among the men; and, in fact, that every means should be adopted for breaking the depressing sameness of a soldier’s life in this country, which are not inconsistent with discipline and good conduct.

“ *Convalescent Wards.* — In respect to the hospital economy of European regiments, the Medical Board are of opinion, that the establishment of a convalescent ward, where recovered men might

* The cummerband, or waist-belt, is of the greatest use to soldiers and convalescents generally; but care must always be taken that it should give a good support to the bowels, and be sufficiently broad to embrace the whole abdomen, from the spine of the os ilium to the ribs; and not, as is too frequently the case, a narrow band, that acts more as a ligature round the abdomen, than as a bandage for the purpose of giving support and warmth. — *J. A.*

† The leather of which shoes are made in India is not sufficiently tanned to resist wet, and consequently absorbs water like a sponge. In wet weather, therefore, if such shoes be worn by the soldier, he must necessarily be liable to the inconvenience of wet while on duty. This is a matter which should be attended to. — *J. A.*

‡ Taking care, it should be added, not to get them wet from the sudden and unexpected fall of rain, — a circumstance very likely to occur. — *J. A.*

remain for a longer or shorter period, on a properly regulated diet, would be extremely useful in preventing relapses of disease, which are frequently the effect of a sudden change from the quiet of an hospital to the free habits of indulgence in a barrack. It might also be well worthy of a trial, to keep recruits under medical surveillance, as to diet and other points affecting their health, for some months after their arrival in the country.*

* We perfectly concur in the remarks contained in the two foregoing paragraphs.—*J. A.*

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THE END.

Fig. 1st



Fig. 2nd



Fig. 3rd



Fig. 4th



Fig. 5th



Congestion of the Liver, with Inflammation of the Bowels, &c

EXPLANATIONS OF THE PLATES.

PLATE XXII.

BRIGHT'S CASE.

[See pp. 477.]

EXAMINATION, TWO HOURS AFTER DEATH.

FIG. 1. — *The general appearance on first laying open the Abdomen.*

- A. The right lobe of the liver in a high state of congestion.
- B. The left lobe of the liver in a partial state of congestion, and with a bright, raw, red patch, as if the peritoneal coat had been torn off.
- C. The stomach. D. The omentum, of a gangrenous appearance, and gelatinous.

FIG. 2. — *The appearance of the Intestines on removing the Omentum.*

- A. The colon.
- B. The small intestines in a high state of inflammation, and glued together by coagulated lymph and pus.

FIG. 3. — *A portion of the Duodenum and Jejunum removed from the body, in a high state of inflammation, and constricted in different parts as if by a chord.*

FIG. 4. — *A portion of the Ilium highly inflamed.*

FIG. 5. — *Part of the Ilium, the Cæcum, and Head of the Colon.*

- A. An ulcer which made its way through the intestine, and allowed its contents to pass into the cavity of the abdomen.
- B. The cæcum. C. The head of the colon.

N.B.—The inflammation in this case was chiefly confined to the external covering of the bowels. The internal surface was free from inflammation, excepting at the termination of the ilium.

PLATE XXIII.

VALLERY'S CASE, No. 1.

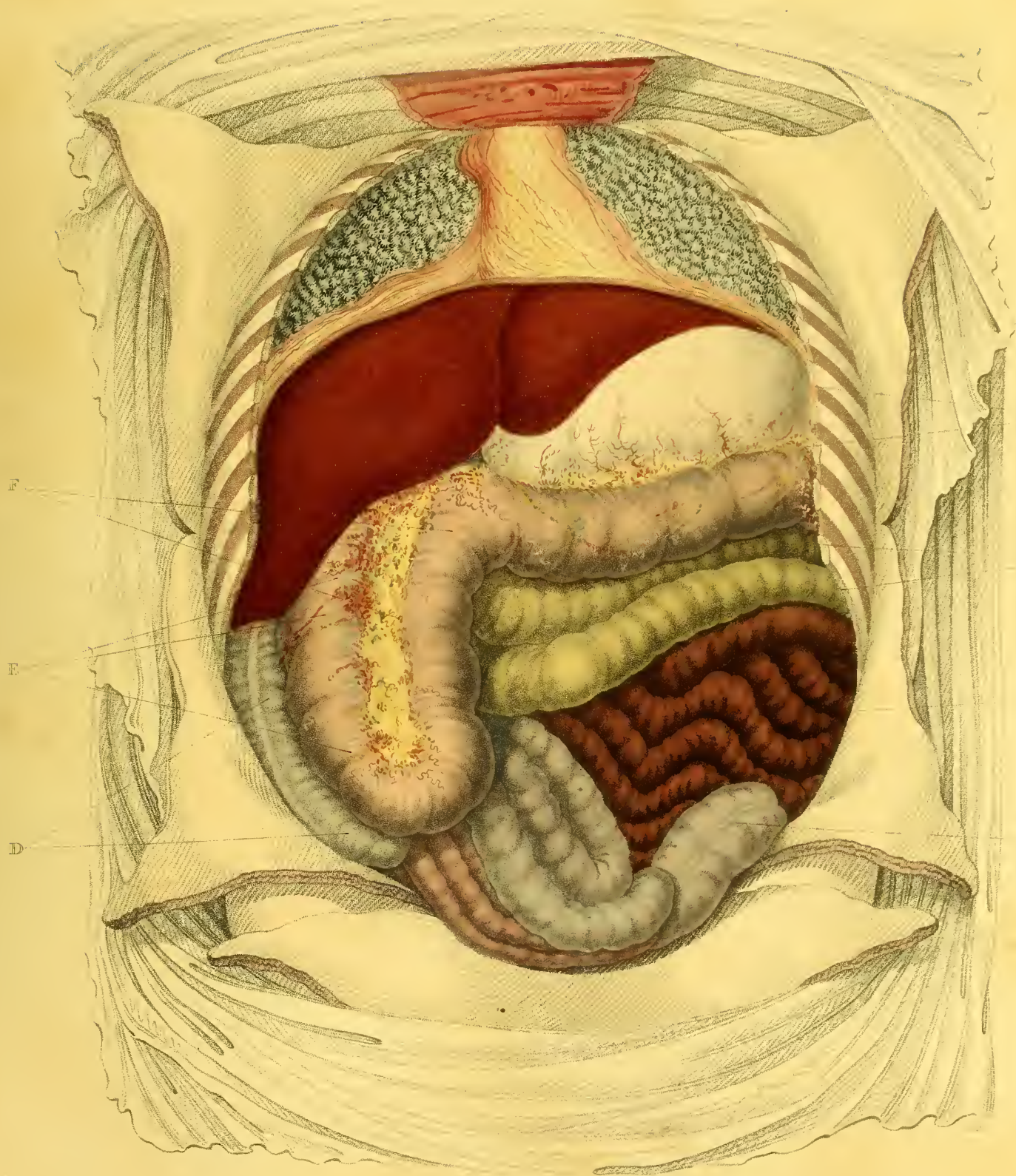
[See p. 98.]

EXAMINATION, FOUR HOURS AFTER DEATH.

Elongation, Displacement, and morbid Adhesions of the Cæcum and Colon in situ.

- A. The stomach.
- B. The jejunum much inflated.
- C. The intestinum ilium, of a purple-red colour, thickened and contracted in its coats, filled with thick, pultaceous, adhesive matter, and with every appearance of a strangulated gut.
- D. The cæcum much distended with flatus, and considerably lengthened.
- E. The head and a portion of the transverse arch of the colon drawn out of its place, forming a long duplicature, and producing a permanent obstruction, with firm cellular adhesions.
- F. The cellular adhesions.

VALLÉRY'S CASE, N^o 1.



Elongation, with morbid adhesions, &c. of the Colon.

Engraved by J. S. W. in 1817

Printed by Longman, W. Rees, John Brown & Co. 1817

Fig. 1st



Fig. 2nd



Fig 1st Morbid Duplicatures, &c. of the Colon. Fig 2nd Inflammation of the Small Intestines

Engraved by J. Smith del.

PLATE XXIV.

WYLLEY'S CASE, No. 1.

[See p. 101.]

EXAMINATION, AN HOUR AFTER DEATH.

FIG. 1. — *Morbid Duplicatures of the Colon in situ, the small Intestines being removed.*

- A. The intestinum ilium entering into the cæcum, which is much inflamed and ulcerated.
- B. The ascending colon.
- C. Duplicature of the colon, forming a loop, which descended under the liver, and produced a permanent obstruction, with strong cellular adhesions.
- D. Displacement of the transverse arch of the colon.
- E. Coagulated lymph and fatty matter adhering to the sigmoid flexure of the colon.

FIG. 2. — *A portion of the Intestinum Ilium, shewing the general appearance of the small Intestines, which were all in a high state of inflammation.*

PLATE XXV.

SMITH'S CASE.

[See p. 95.]

EXAMINATION, FOUR HOURS AFTER DEATH.

FIG. 1. — *Displacement of the Sigmoid Flexure of the Colon, inducing serious structural changes, the small Intestines being removed to shew its position.*

- A. The right lobe of the liver.
- B. The gall-bladder.
- C. The stomach in a high state of vascularity.
- D. Fatty and cellular matter forming obstruction at the right and left portions of the arch of the colon.
- E. Displacement of the sigmoid flexure of the colon.

FIG. 2. — *A portion of the Jejunum, shewing the general appearances of the small Intestines.*

FIG. 3. — *Cæcum and Head of the Colon laid open, much inflamed and ulcerated.*

- A. Part of the intestinum ilium entering the cæcum.
- B. The cæcum inflamed and ulcerated.

Fig. 1st



Fig. 2nd

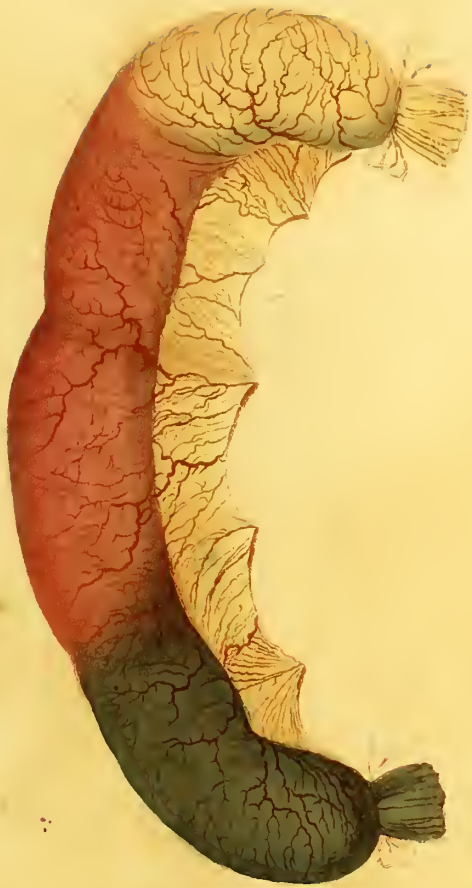


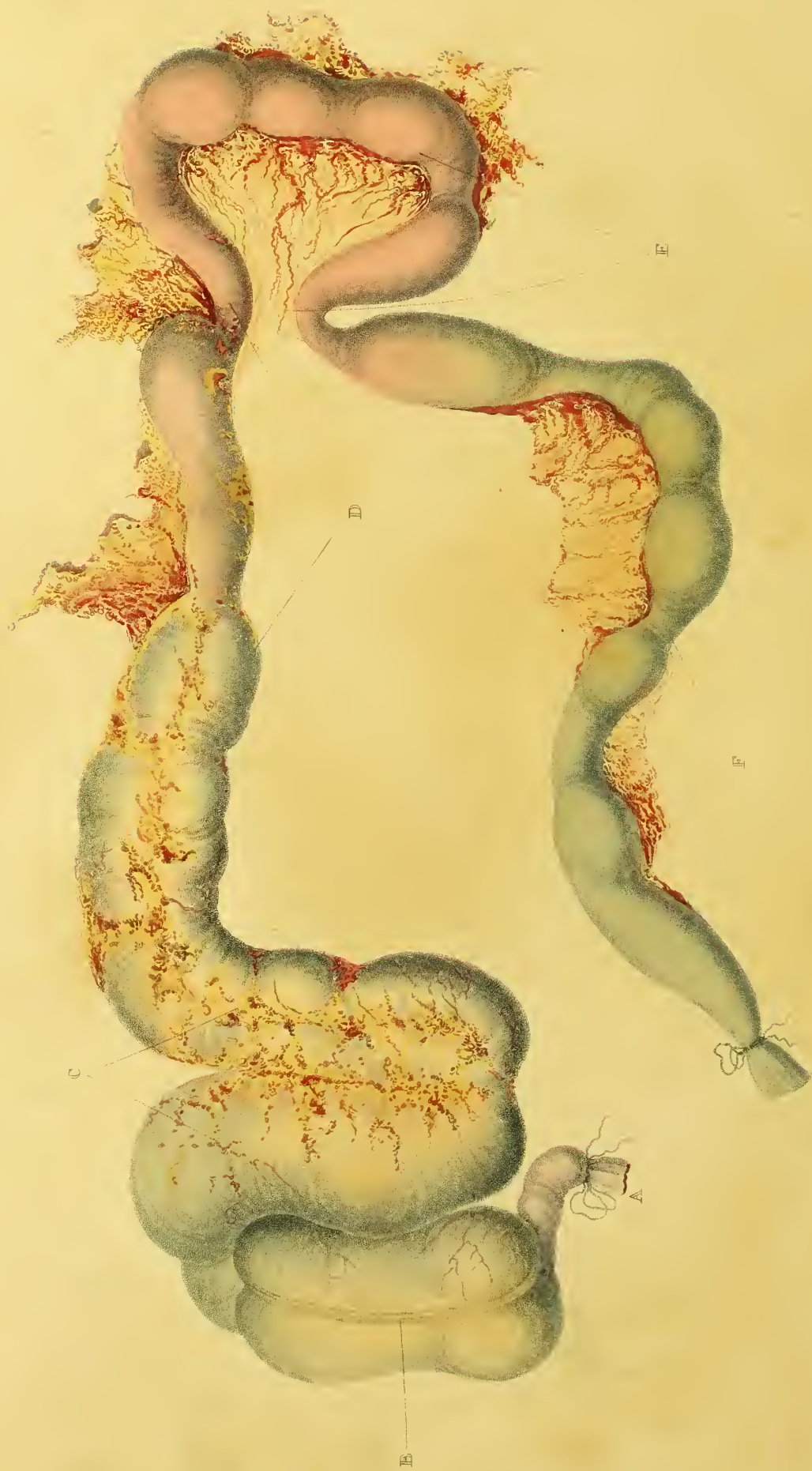
Fig. 3rd



Displacement and Alteration of the Colon. 1. Fig. 1st & 2nd. Inflammation of the small Intestine. 1. Fig. 2nd & 3rd







Enlargement of the Caecum and Colon, with adhesions and Structures of the latter.

PLATE XXVI.

VALLERY'S CASE, No. 2.

[See p. 98.]

The large Bowel removed to shew its contractions and adhesions.

- A. Ilium entering the cæcum.
- B. Cæcum considerably enlarged and inflated.
- C. The elongation, adhesion, and displacement. (See Plate XXIII. Letter E.)
- D. Contractions of the transverse arch of the colon.
- E. Permanent strictures of the descending colon, with cellular adhesions and inflammation.
- F. Strictures in the sigmoid flexure and rectum.

PLATE XXVII.

WYLLIE'S CASE, No. 2.

[See p. 101.]

FIG. 1.— *The Colon removed from the subject, shewing its displacement and adhesions, occasioning obstruction.*

- A. Intestinum ilium entering the cæcum.
- B. The cæcum inflamed and ulcerated internally.
- C. The head of the colon.
- D. Displaced and obstructed portion of the colon, inflamed and ulcerated internally.
- E. The rectum in a high state of inflammation.

FIG. 2.— *The obstructed portion of the Bowel laid open to shew its ulcerated state.*

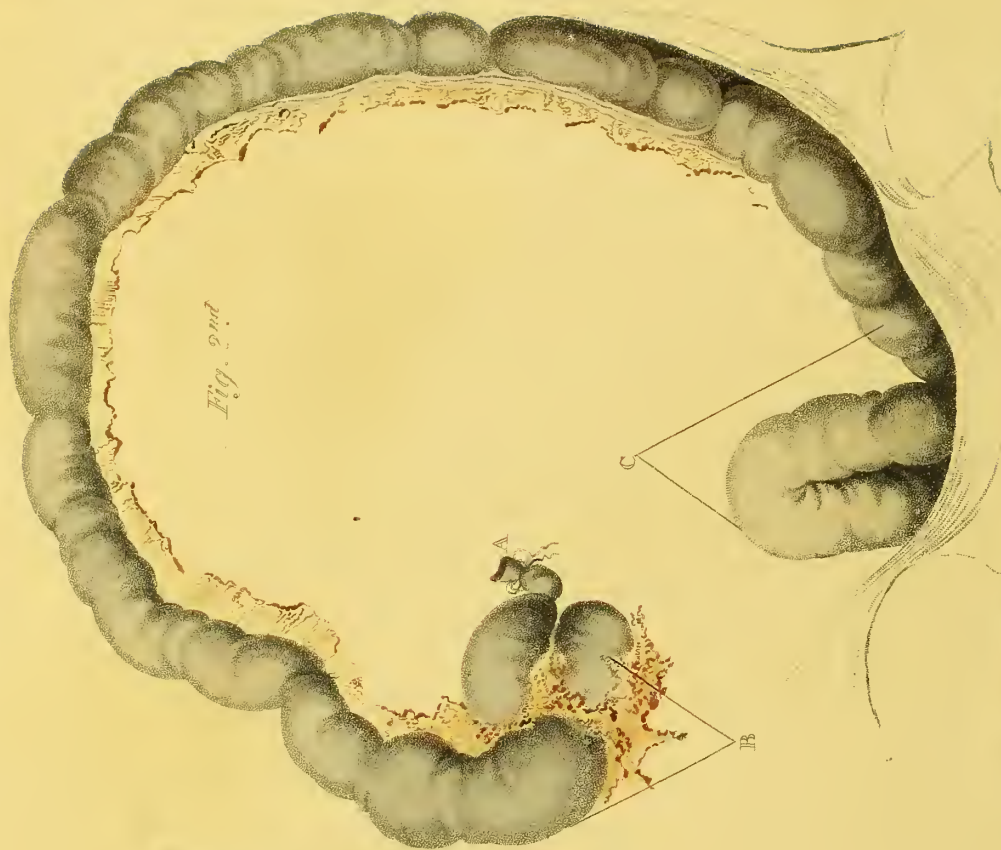
- A. Intestinum ilium entering the cæcum.
- B. The cæcum ulcerated.
- C. Head of the colon healthy.
- D. The displaced and obstructed portion of the colon ulcerated.

Fig. 1st



Placenta and Uterus of a Woman and Child

Fig. 1st



Displacement and Ulceration of the Cecum: Inflammation of the Bowels, &c.

PLATE XXVIII.

KERRAN'S CASE.

[See p. 104.]

EXAMINATION, FOUR HOURS AFTER DEATH.

*Displacement of the Sigmoid Flexure of the Colon; Inflation of the small Intestines;
and Ulceration of the large Bowel.*

FIG. 1.—*Shewing the appearances when the anterior Parietes of the Abdomen were removed.*

- A. The liver much enlarged, and pressed into the right hypochondrium by the inflation of the small intestines.
- B. The stomach pressed out of its place by the same cause.
- C. The small intestines of a dark-gray colour, covered by the omentum, and the vessels fully injected with blood.
- D. The cæcum much thickened, and in a nearly gangrenous state.

FIG. 2.—*The small Intestines removed, shewing spasmodic constrictions and a displacement of the Sigmoid Flexure.*

- A. Part of the intestinum ilium entering the cæcum.
- B. The cæcum thickened in its coats, and diseased.
- C. Displacement of the colon.

FIG. 3.—*The Cæcum and Head of the Colon laid open, to shew the ulcerations and sphacelations in the internal surface.*

- A. The ilium entering the cæcum.
- B. The cæcum thickened in its coats, and ulcerated.
- C. Head of the colon ulcerated.

FIG. 4.—*Part of the Rectum laid open, shewing the thickened, ulcerated, and sphacelated state of its internal membrane.*

- A. The ulcerated surface.

PLATE XXIX.

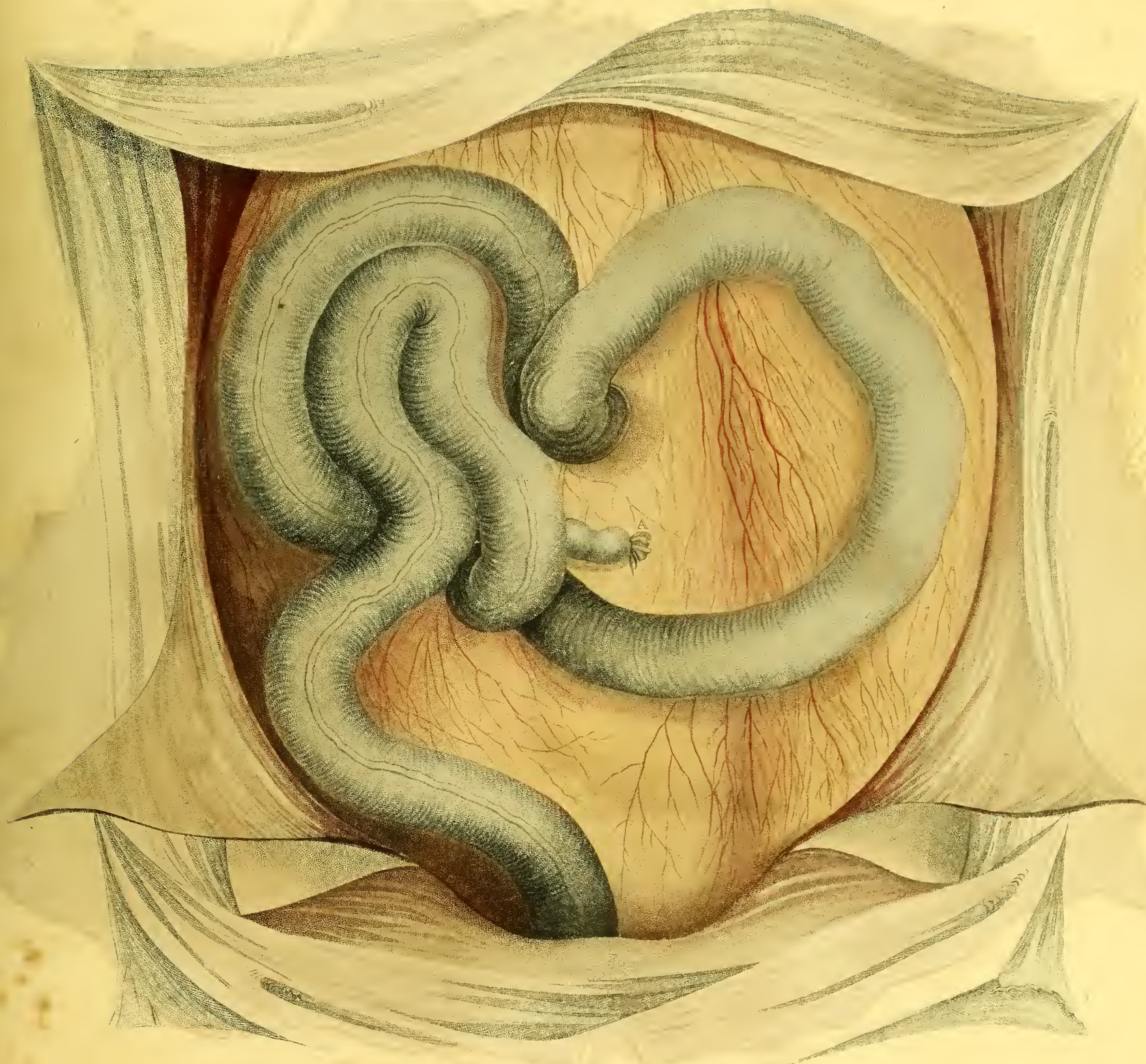
HAND'S CASE.

[Vol. I. p. 539, Plates III. and IV.]

*Elongation and singular displacement of the Colon, forming extraordinary convolutions
of this bowel.*

A. The intestinum ilium entering the cæcum.

HAND'S CASE.



Elongation and singular displacement of the Cecum.

Fig. 1st



Fig. 2nd

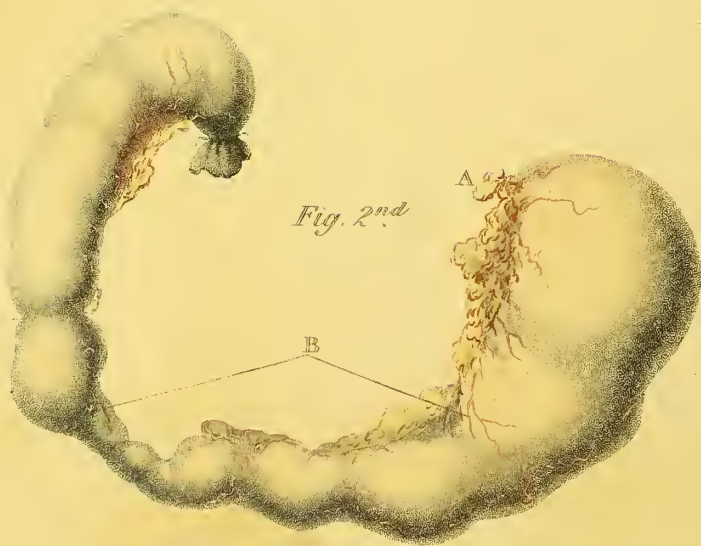


Fig. 3rd



Shewing Contractions, Ulcerations, &c. of the Alimentary Canal.

PLATE XXX.

CAVANAHAH'S CASE.

[See Vol. I. pp. 492—498, Plate XVI.; and Plate XXXV. Vol. II.]

FIG. 1. — *The small Intestines being removed to shew the position of the Colon.*

- A. The intestinum ilium.
- B. A portion of the ilium in a state of high inflammation, and by cellular adhesions firmly attached to the head of the rectum.
- C. The ilium entering the cæcum.
- D. The cæcum thickened, inflamed, and ulcerated internally.
- E. The head of the colon firmly bound down to the cæcum by strong cellular adhesions, forming a duplicature of the bowel, and thereby obstruction.
- F. The ascending colon.
- G. Constriction and inflammation of the descending colon.
- H. A rupture in the gut through which the contents of the bowel passed into the abdomen.
- I. A permanent obstruction formed by firm adhesions between the sigmoid flexure and head of the rectum, and bound down by a strong cartilaginous substance to the sacrum.

CONNELLY'S CASE.

[See Vol. I. p. 261.]

FIG. 2. — *The Stomach and a portion of the Duodenum removed.*

- A. The cardiac orifice of the stomach.
- B. The pyloric extremity of the stomach elongated and much contracted at its termination in the duodenum.
- C. A strictured portion of the duodenum.

FIG. 3. — *The whole of the large Intestine removed to shew its constrictions.*

- A. The ilium entering the cæcum. B. The cæcum.
- C. The ascending colon much inflated and distended.
- D. Strictures throughout the transverse and descending colon.
- E. The rectum considerably inflated.

PLATE XXXI.

WHITE'S CASE.

[See p. 171.]

EXAMINATION, FOUR HOURS AFTER DEATH.

Acute, uncomplicated Dysentery, with Scybala, and a blackened and inflamed state of the mucous Surface of the Colon.

FIG. 1.—*The Colon removed from the body, in a state of inflammation, internal ulceration, and spasmodic contractions throughout its whole course.*

- A. The cæcum thickened and inflamed.
- B. The rectum.
- C. The intestinum ilium entering the cæcum.

FIG. 2.—*The Cæcum and Head of the Colon laid open, exposing the Internal Coat inflamed, blackened, thickened, and presenting tubercular ulcerations.*

- A. The ilium.
- B. The cæcum. — (See Plate XL. fig. 2.)



Fig. 1st

B

Fig. 2nd

C



B

A

Fig. 1st showing accumulations in the cells of the Colon, with C. inclusions. Fig. 2nd A separate change of the Colon.



Plate. Inflammation of the mucous surface of the large intestine

PLATE XXXII.

JAMES'S CASE.

[See p. 169.]

Acute Inflammation of the mucous Surface of the large Intestine.—The Colon laid open throughout its whole course, shewing the mucous Surface studded with small ulcerations.

- A. The intestinum ilium entering the cæcum.
- B. The cæcum in a state of high inflammation and ulceration, extending throughout its whole course.
- C. The rectum, the mucous coat having been detached and passed off by stool.

PLATE XXXIII.

DONACLIFF'S CASE.

[See Vol. I. p. 563—Plate IX.]

FIG. 1.—*The Colon laid open from the Rectum to the Cæcum, shewing its internal Surface.*

- A. The rectum, the mucous coat having sloughed and passed off by stool.
- B. Part of the villous coat sloughed, lying loose in the bowel, and an ulcer which had made its way through the coats of the gut.
- C. The cæcum laid open, the villous coat sloughed, lying loose, and perfectly detached and gangrenous.
- E. The intestinum ilium contracted in many parts.
- F. A cul-de-sac in the ilium.

DONOVAN'S CASE.

[See Vol. I. p. 486—Plate XIII.]

FIG. 2.—*Portion of the Colon, constricted, inflamed, and ulcerated.*

- A. The cæcum ulcerated.
- B. The intestinum ilium entering the cæcum.
- C. Red ulcerated spots, from ulcerations of the internal surface, and, in parts, extending throughout the whole gut.

Fig. 1st



Fig. 2nd



Inflammation and Ulceration of the Cecum, Colon and Sigmoid.

Engraved by J. Semple, Scot.

Fig. 1st



Fig. 2nd



Fig. 1st Affection, &c. of the Colon, and, Hum. Fig. 2nd Affection, Sphaculation, &c. of the internal surface of the Colon.

Engraved by J. Steuart, Scot

PLATE XXXIV.

LYNCHE'S CASE.

[See Vol. I. p. 544—Plate XII.]

FIG. 1.—*The Colon laid open, and a portion of the Intestinum Ilium, with two small Ulcers at its entrance into the Cæcum.*

A gristly and hardened condition of the cæcum, and ulcerations throughout the colon. The colon was so exceedingly tender, that it tore like wetted paper.

FITZSIMMON'S CASE.

[See Vol. I. p. 187—Plate XV. fig. 2.]

EXAMINATION, THREE HOURS AFTER DEATH.

The whole intestine, from the cæcum to the rectum, laid open, exhibiting throughout its whole course tubercular ulcerations, and a sphacelated state of the mucous surface.

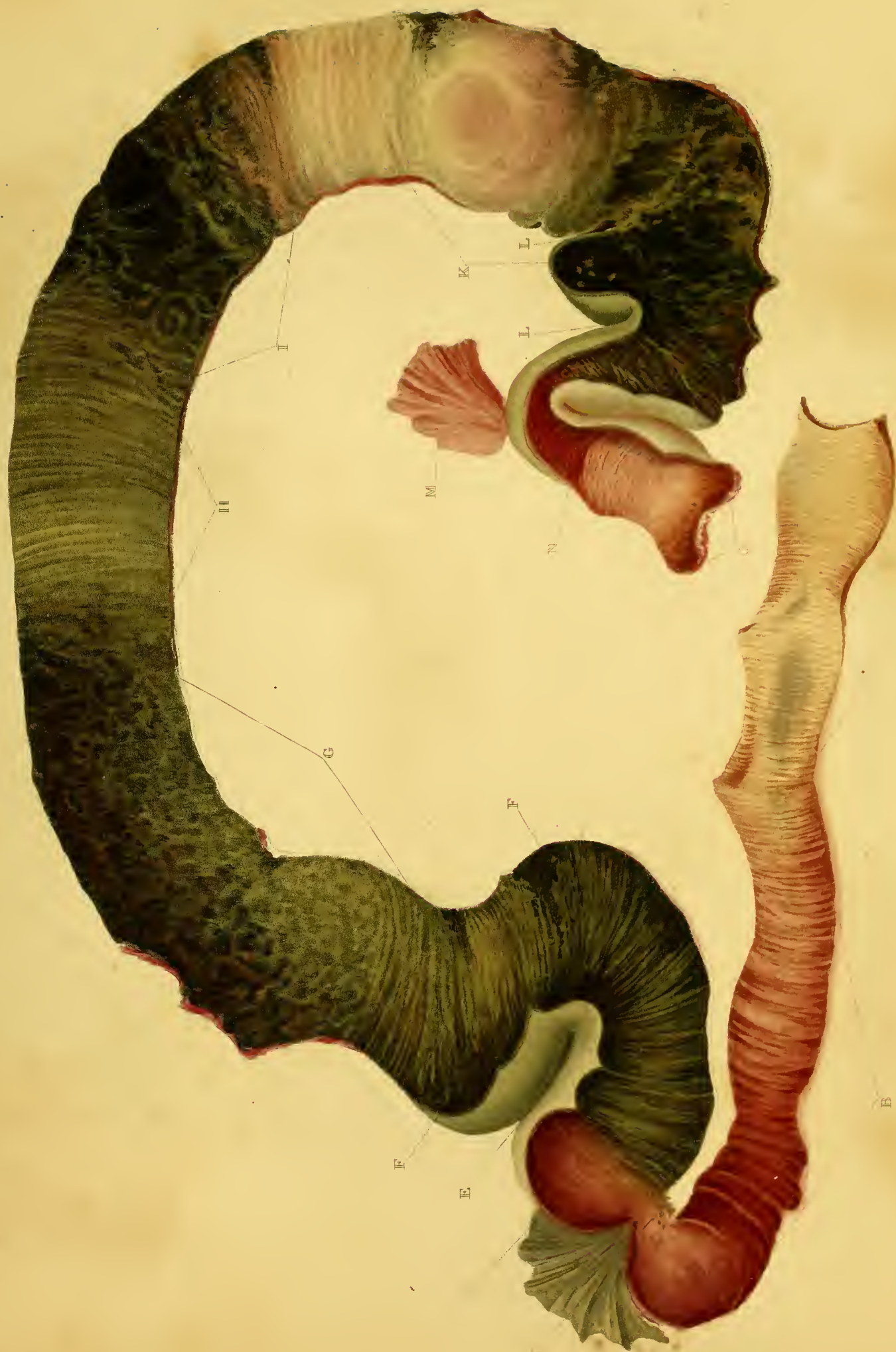
PLATE XXXV.

CAVANAHA'S CASE, No. 2. — Plate XXX. fig. 1. ; and Plate XVI. Vol. I.

[See Case, Vol. I. pp. 492—98.]

The Colon laid open from the Ilium to the Rectum.

- A. A portion of the intestinum ilium in a healthy state.
- B. Portion of the ilium in a state of high inflammation.
- C. The entrance of the ilium into the cæcum, highly inflamed.
- D. The cæcum a dark-red colour, and ulcerated.
- E. Firm adhesions between the cæcum and head of the colon, producing obstruction.
- F. Dark-green and sloughy condition of the mucous coat of the colon.
- G. Sphacelated state of the mucous membrane of the colon.
- H. A small portion of the transverse arch of the colon in a nearly healthy condition.
- I. Descending colon inflamed and ulcerated, with black and green sloughs.
- K. Sigmoid flexure of the colon, where the ulcers had made way through the gut, with blackish-green sloughs lying loose in the bowel.
- L. Firm adhesions by a cartilaginous substance between the sigmoid flexure and the rectum, bound down to the sacrum at M.
- N. The rectum highly inflamed, the mucous coat having sloughed off.
- O. The lower extremity of the rectum changed in structure, and forming a hard, gristly band.



The Colon and part of the Duodenum laid open, showing the appearances in hepatic Sympathy



Ulcerations and Strictures of the Colon

Fig. 1st. by J. Stewart. Sep.



Fig. 1st

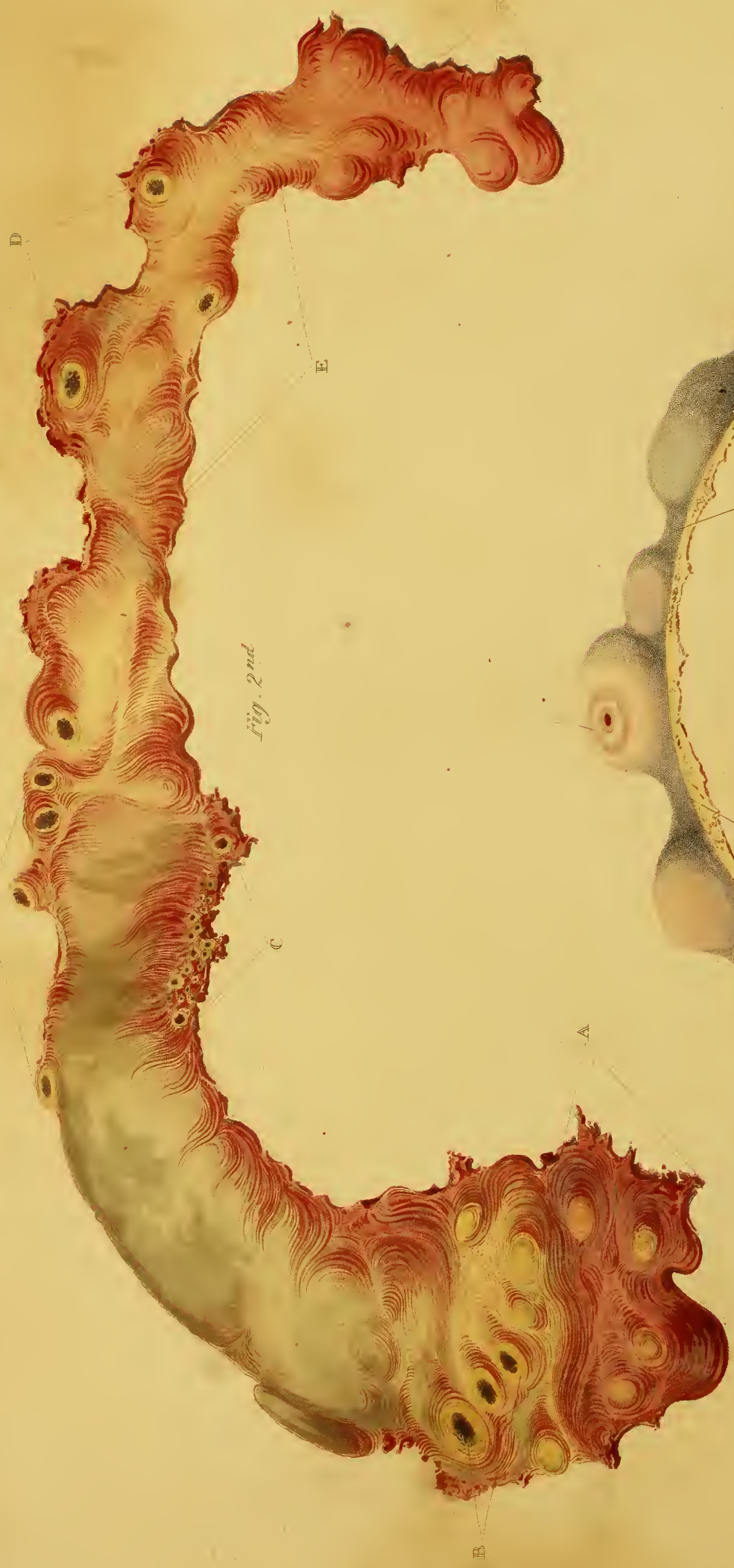


Fig. 2nd

PLATE XXXVI.

COSGROVE'S CASE.

[See p. 176.]

EXAMINATION, THREE HOURS AFTER DEATH.

Acute Dysentery—contractions and ulceration of the Colon.

FIG. 1.—*The great Intestine, removed from the body for examination, in a high state of inflammation, from the Cæcum to the Rectum.*

- A. The ilium.
- B. The cæcum.
- C. Contractions.
- D. An ulcer, which had made its way through the gut, and appeared like a vaccine pustule.
- E. The rectum.

FIG. 2.—*A portion of the Rectum and descending Colon laid open.*

- A. The extremity of the rectum, the mucous coat having passed off by stool.
- B. Three deep ulcers, with bloody spots.
- C. A cluster of small ulcers.
- DD. Large distinct ulcers.
- E. Contractions.
- F. The circumference of this portion of the gut is one inch and a half.

PLATE XXXVII.

HAGARDISH'S CASE.

[See pp. 359.]

EXAMINATION, SIX HOURS AFTER DEATH.

Constriction of the Colon, after frequent attacks of Dysentery.

FIG. 1. — *The Viscera in situ.*

- A. The liver very much enlarged, and pressed into the right hypochondrium by the extraordinary inflation of the colon.
- B. The gall-bladder distended with thick, inspissated, green bile.
- C. The right lobe of the liver pressed down into the right iliac region by the inflation of the colon.
- D. A small portion of the stomach visible.
- E. The transverse arch of the colon very much enlarged and distended, in consequence of the stricture in the descending colon, marked C. fig. 2.
- F. The omentum, of a green, gelatinous appearance, and collected in the left hypochondrium.
- G. The cæcum inflated.

FIG. 2. — *The Colon removed from the body for examination.*

- A. The ilium entering the cæcum.
- B. The cæcum and head of the colon much inflated.
- C. Contractions and strictures in various parts of the colon, and the intermediate spaces very much inflated.
- D. The rectum.

COBB'S CASE, No. 1.

[See p. 363.]

EXAMINATION, THREE HOURS AFTER DEATH.

Chronic Diarrhœa after acute Dysentery: the small Intestines removed to shew the position and Strictures of the Colon.

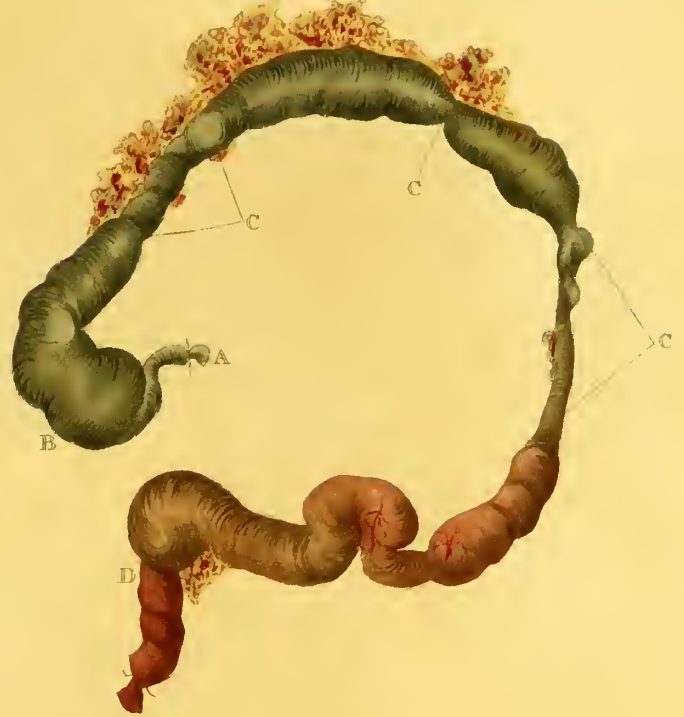
- A. The liver. B. The stomach. C. The ilium entering the cæcum. D. Constriction of the descending colon, and the sigmoid flexure much inflated.
- E. Constriction from the sigmoid flexure of the colon to the extremity of the rectum, firmly attached and bound down by cellular adhesions to the os sacrum.

HAGARDIST'S CASE.

Fig. 1st



Fig. 2nd



COBB'S CASE, N^o 1.



Enlargement of the Liver. Constrictions of the Colon and Rectum.



Inflammation, Ulceration and, Abrasion of the mucous coat of the large Intestines.

Engraved by J. Storr

PLATE XXXVIII.

C O B B ' S C A S E, No. 2.

[See p. 363. Pl. XXXVII. fig. 1.]

Chronic Diarrhœa and Dysentery. — The Colon laid open from the Cæcum to the Rectum.

- A. The intestinum ilium entering the cæcum.
- B. A large ulcer in the cæcum.
- C. An enlarged gland.
- D. Constricted portion of the ascending colon inflamed and ulcerated.
- E. Transverse arch of the colon, studded with small ulcers, which increase and become deeper from the descending colon to the rectum, at F.

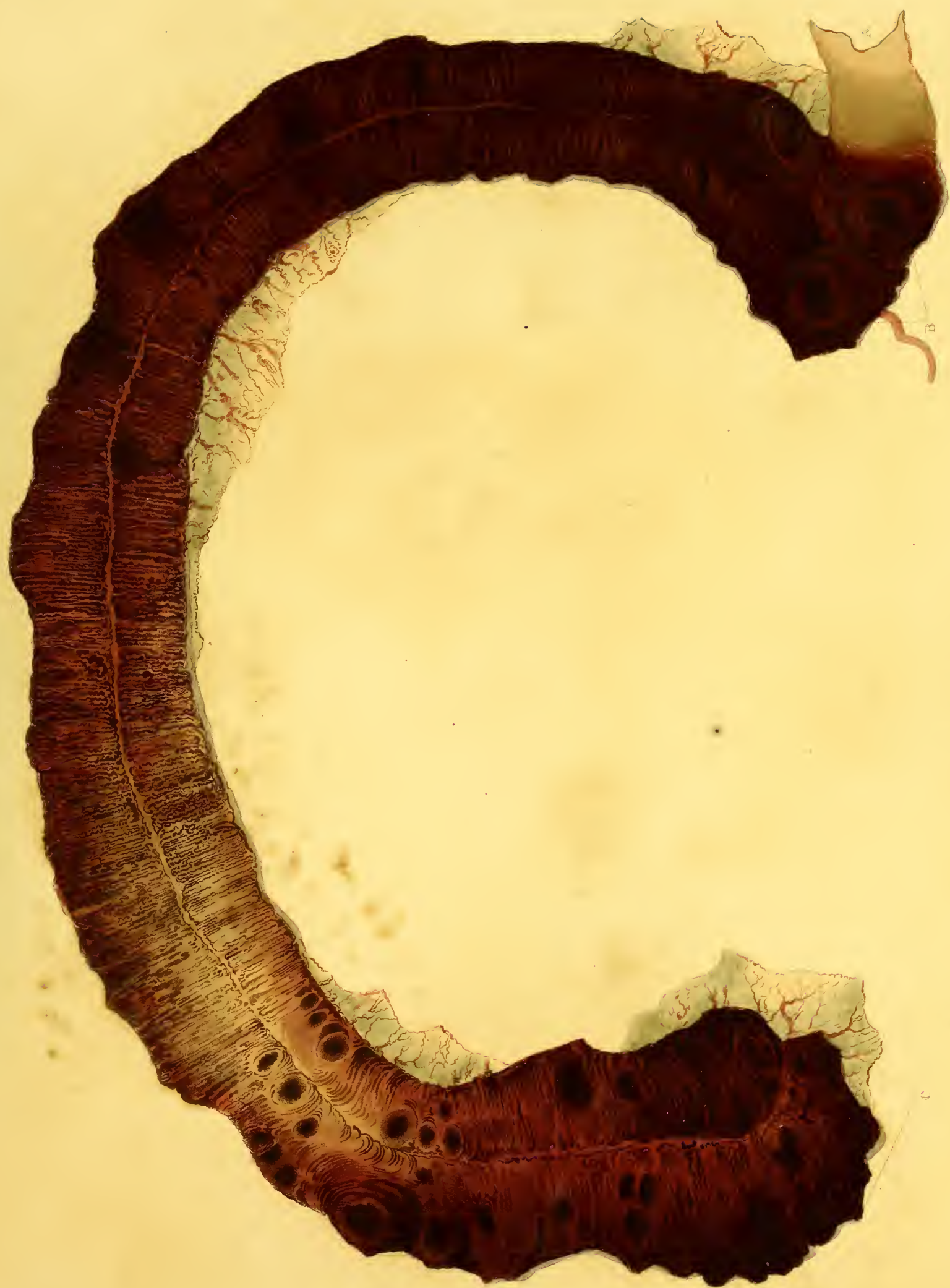
PLATE XXXIX.

JOHNSTON'S CASE.

[See "Sketches of the Diseases of India," p. 88.]

This man died of cholera, and had suffered for some time previously from chronic dysentery.

- A. The ilium entering the cæcum.
- B. The cæcum ulcerated, tuberculated, blackened, and thickened in its coats.
- C. The rectum presenting a similar state of disease.



Suppuration. Ulcerative Sec. of the internal surface of the Colon.





Fig. 2nd



Extensive Organic Disease, &c. of the Colon?

Engraved by J. Stewart, Senr.

London, Published by Longman, Ross, Orme, Brown & Green, 1828

PLATE XL.

PETER CARR'S CASE.

[See p. 253.]

EXAMINATION, TWO HOURS AFTER DEATH.

FIG. 1. — *Chronic Dysentery, cartilaginous and gristly Structure of the mucous Membrane of the Colon and Rectum.—The Gut laid open from the Cæcum to the Rectum.*

From the cæcum to the transverse arch of the colon there was the appearance of the villous coat having sloughed away; but from this to the sigmoid flexure, the gut had a hard, cartilaginous appearance, with circular prominences throughout the remainder of the bowel to the rectum, where the same hardened, cartilaginous membrane formed transverse lines to the extremity of the rectum.

FIG. 2. — WHITE'S CASE.

[See p. 173—Plate XXXI.]

The sigmoid flexure and rectum laid open, shewing the morbid appearances of this part of the large bowels, and a peculiar form of ulceration, as described at page 173.

